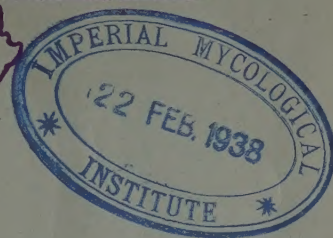


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JANUARY 5th, 1938

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THE PIG PEN

The Management of Pigs

Breeding and Feeding.

IN a paper read to farmers at South Kilkerran, S.A., Mr. J. C. Scott-Todd recently discussed the management of pigs as reported in the South Australian Journal of Agriculture.

A great deal of success or non-success in pig keeping is due to attention to details or the want of it; it is a sideline which cannot be made by lax or irregular attention. It is a recognised fact that pigs are one of, if not the best, sidelines on the average farm. Especially so in view of the small amount of capital involved in the purchase of foundation stock and the very small outlay required for the housing of the animals.

Farmers who have tried pig raising without profitable results are prone to condemn the business rather than condemn their own want of, perhaps, experience, patience, and attention to details.

In a number of cases, the setbacks that pig men have received were due principally to the tendency, when pigs were bringing good prices, to rush in and buy young stock at prohibitive prices, feed them up without considering any details in respect to cost, and then be unfortunate enough to sell in a glutted market.

Breeding: This very unfortunate happening can to a great degree be avoided by the farmer breeding his

own stock in a number that is in keeping with his ability to hold them, rather than sacrifice them on a flat market, or on account of scarcity of feed.

To be able to carry out the breeding of one's own pigs, not less than four sows should be kept; and whatever breed one fancies, trueness to type will pay every time.

Of course, a number of farmers do not feel disposed to pay high prices for brood sows, and consequently they use whatever kind and shape is available, not realising that it takes less feed to keep a good animal than it does to tolerate a mongrel, and in addition the result of mongrel-breeding is apparent in the uneven litters, weakling pigs, rainbow colors, and continued bad doers. If, however, one is prepared to breed with any sows available, it is possible to counteract the ill-effects to a great degree by using a good boar. With a good sire, proper attention to culling, and a determination to avoid in-breeding, one can ultimately produce litters that will show adequate returns and a great saving in the feed bill.

A great diversity of opinion is held in regard to the proper age at which to mate maiden sows; but the greatest mistake that one can make is to breed from sows at immature ages.

Well kept young sows may show signs of heat at about 3 to 4 months, but every care should be taken not to breed at that age, for no good results will be obtained. It has been found repeatedly, that this practice has led to the birth of small, weak

litters, which in most cases are not worth the time wasted; and the bodily strain on the young sow has been apparent in the subsequent litters.

On the other hand, one can breed with sows that are too old, in that they are inclined to be less tolerant mothers, and are not such good doers as younger sows. Therefore a maiden sow that litters about 10 to 14 months old will assuredly give the most satisfactory results.

After the birth of the litter, and after details of the disposing of after-birth, etc., have been carried out, the sow should be disturbed as little as possible.

The young pigs can be satisfied with their mother's milk for three weeks; then arrangements should be made, so that a weak mixture of pollard and milk can be fed to them without interference from the sow, but on no account should the young pigs be overfed, as they are easily upset, and every setback they receive at this age has a serious check on their development.

At about four to five weeks castrate the pigs so as to give them at least two weeks on the mother before weaning, for the check on them is not so great as when they are operated on and straight away deprived of their natural food.

In regard to the boar, procure as good a boar as is possible, and on no account breed from him under six to eight months old. From that age onward he is full of vitality and can be safely used up to the age of four years, when he should be displaced; for from that age he will become slug-

gish and at times inclined to be savage.

Breeds: The question of the best breeds to keep and the system of marketing is a matter that the individual farmer must study to make possible the best results.

The Duroc sow crossed with a good Berkshire boar will produce good litters and pigs that are saleable at any time. There are possibly other breeds that may prove to be of equal commercial value, and here again the pig raiser should keep in touch with the study the prices obtained at the local markets.

Marketing: Taking into consideration the requirements of buyers and the most advantageous sales for the seller, with weaners at from 18/- to 22/- per head a good sow will return from £12 to £15 per year, which, with the initial costs, time, and handling, is the most profitable manner in which to dispose of one's surplus young pigs. If, however, it is desired to hold with the object of fattening, the best policy is to hold until about seven months, when under proper conditions one should have prime young baconers of around 200 lbs., which would give a dressed carcass of 150 lbs. to 160 lbs. This class of pig invariably brings good prices, and in comparison to heavier pigs the profit will be greater, when one takes into consideration the time, attention and food consumed by holding them for a longer period.

Feeding: Cracked grain, soaked, is one of our best foods; the short period required for soaking will not have the tendency to sour the food, as is likely with the time necessary to soak whole grain.

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Mr. H. A. Peterson, formerly of the Department of External Affairs, has been appointed Australian Government Commissioner in Netherlands India, in succession to Mr. C. E. Critchley. Mr. Peterson will sail on the "Nieuw Holland" and will arrive in Batavia early in March. In the meantime it is proposed that he shall visit each of the State capitals to discuss with State officers and business interests, trade and other matters affecting Netherlands India. Mr. Peterson expects to be in Melbourne in the middle of January.

World Affairs

"Economic Appeasement" is the title of an important memorandum to the Economic Committee of the League of Nations by Mr. F. L. McDougall, C.M.G., Economic Adviser to the Australian Government in London. This memorandum is reviewed in "The Empire Producer." Mr. McDougall emphasises the importance of an improvement in the standard of living and sees in this ideal not only a revival of world trade, but an appeal to masses of the people. Whereas unemployment has been reduced by re-armament orders, a longer view would be developments on a peacetime basis to permanently improve the living standards of the people. The programme includes—

(1) A method of international agreement for the improvement of the remuneration and conditions of labor—namely, the International Labor Office method.

(2) Increased social services, which in effect, mean using the revenue-collecting powers of the State to se-

cure a modification of income distribution.

(3) Cheapening of the retail price of food and other requirements.

Mr. McDougall observes the adherence of the United States to the International Labor Office, the raising of wages and shortening of hours in France and other world factors; also the low purchasing power of the peasant population in S. Eastern Europe, and the lower conditions still of the peoples of India and China. Higher Nutritional Standards (now being studied by the League of Nations) would mean increased industrial activity all round. Nations are also now concerned with things other than material progress and are determined for social and cultural as well as for political reasons to secure a balanced economy.

Mr. McDougall's memorandum is an important document and very opportune, as the English speaking nations are seeking for an effective answer to the challenge of Communism and Fascism.

Acknowledgment: The Editor and staff acknowledge with pleasure the receipt of a charming Christmas and New Year folder from Nitrogen Fertilizers Pty. Ltd., Melbourne. The picture shows a farmer, horse and dog "at the slipsails."

A handy pocket diary has been received from the Overseas Farmers' Co-operative Federations Ltd., London. The diary contains valuable statistics of imports into the United Kingdom. It is noted that the turnover of the Overseas Farmers' Organisation increased from £307,419 in 1921, to £39,378,595 in the period 1931-1937.

Attractive calendars have been received from Messrs. Reilly's Central Produce Mart Ltd., Dunedin, New Zealand, and Messrs. H. V. McKay Massey Harris Pty. Ltd., of the Sunshine Harvester Works, Sunshine, Victoria. A Christmas card has been received from Messrs. Dan Wuille & Co. Ltd., Covent Garden, London.

OBITUARY

Death of Mr. H. G. Colombie.

It is with sincere regret that we have to record the death of Mr. Henry George Colombie, of Temple Court, Melbourne, on December 16, after a protracted illness.

Resident in Victoria for some 15 years, Mr. Colombie made many friends.

After having left the English Army at the cessation of hostilities he represented in Australia a combination of leading overseas organisations operating the Continental and United Kingdom ports for the importation of Australian fresh fruit.

Having had a world-wide experience of fruit marketing, he brought to the industry many progressive thoughts, and was one of the original advocates of the American style of package for the export of Apples, he was an insistent force towards the betterment of the Australian fruit pack as a whole, as witness the Colombie Cup and generous entertainment to bring growers and traders together.

His personality and energy were largely responsible for the formation of the Victorian Fruit Marketing Association, and the South Australian Fruit Marketing Association: from the V.F.M.A. evolved the Australian Apple and Pear Export Council, which combines the whole of the States into one effective organisation, of which he was the first acting president, and latterly the honorary adviser. His honesty of purpose and integrity in business were predominant characteristics.

Many well known citizens were present at the burial service.

At the December meeting of the executive committee of the Victorian Fruit Marketing Association, tributes were paid to the late Mr. Colombie's energy and farsightedness: it was felt that the industry had lost a good friend and this country a good citizen. All delegates stood in silence as a tribute to his memory.

Mr. Colombie's remains were privately cremated, and the ashes will eventually be taken to England for burial there, by his widow, who resides at 256 Williams-road, South Yarra, Vic.

Death of Harcourt Grower

Mr. Reuben Walter Eagle, of Harcourt, passed away on December 10 at the age of 58 years. He was a well-known and highly appreciated grower and citizen. He had a cheery word and a smile for all, and his death is mourned by a wide circle of friends. Sympathy is extended to the widow, his brother, Mr. Eb. Eagle, and all relatives.

Much regret was felt at the untimely death, in London, of Brigadier-General M. Bouchier, Agent-General for Victoria. Mr. Bouchier had a distinguished career as a soldier and subsequently as a member of the Victorian Parliament. He was highly esteemed by all who knew him. As a representative of a fruitgrowing constituency he performed good service for the fruit industry.

There was a sad fatality on December 16 at Quantong, when Mr. Johann Robert Bormann, aged 65 years, accidentally drank poison, which had been prepared for spraying.

Mr. Bormann was not feeling well, and took what he thought was a dose of medicine from a bottle of cough mixture. The deceased was born at Palmer, South Australia, and came to the district 14 years ago. He leaves a widow and six children.

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Letters to the Editor

Power Alcohol from Waste Fruit

To the Editor of the "Fruit World and Market Grower."

Sir,
"Common Sense" writes that waste fruit cannot be made into alcohol as a commercial spirit. Let me remind him that this same old tale was told in 1916 about sugar molasses in Queensland. In one year, I am given to understand that molasses equal to 5,000,000 gallons could have been made into power alcohol and sold for 51d. per gallon. Then he goes on to say that immature, sour, rubbishy stuff is of no value. Here again he is absolutely wrong. I spoke to several manufacturers about this matter. One stated that grass or straw could be raked up with the fruit, in fact, he said there are 80 gallons of alcohol to the ton of straw.

"Common Sense" states that it depends on the sweetness; what nonsense! Why, Water Melons are sweet enough, and they only contain 3 gallons of alcohol per ton!!

Take the cellulose industry, which is to start in South Australia under Herr Heerdt, the technical adviser, who is going to use up all the waste straw for making paper, etc., but the point is this, "Herr Heerdt says that no sooner than one thing becomes established than science races ahead and discovers another product. He expressed surprise at the Commonwealth Board of Science and Industry not knowing of this cellulose industry.

Alcohol is undoubtedly a valuable product. In 1916 the war office commandeered the Potatoes in England to make alcohol, for explosive purposes. Now Germany has discovered a high explosive in rhubarb, and is growing it on a large scale for such purposes.

While I was in Germany some time ago that country was offering 4/- per case for poor Apples to make cider, whereas here 1/- per case is the limit. It is only a matter of science and common sense. Some people tell you that cider cannot be made from poor fruit, but that is wrong, according to experts, whom I met on the Continent and in England. Certainly the real art of making cider has not yet been discovered, so I was told by these experts.

The manufacturers here told me that at a rough estimate, 1/- to 1/9 per case could be given for Apples for the manufacture of alcohol. You must also remember that wine can be made from Plums and Rhubarb. The Rhubarb wine of Norway is considered a "treat" by English visitors, but it is not made here to my knowledge, but why?

My travels abroad taught me that science is only just coming into action. You must remember that after the Apple has been crushed and the juice extracted there is a valuable food left in the remains. This remains, or by-product of the Apple is being manufactured in S.A. for cattle and I am told that the market is growing every day for it. This is where that clever German comes in, Dr. Willi Schacht, of Weimar, whom Herr Heerdt studied under. He says, "You

no sooner extract one product and you have a valuable by-product left," proving it is not only alcohol alone that the Apple contains.

Don't sit back and copy Germany, but make a move yourselves and show the world that you can do it too. If you listen to a certain type of person you will get nowhere. I am prepared to say that the thousands and thousands of pounds paid to fruit officials every year in Australia to tell us how to grow fruit (who have themselves never grown fruit for a living) could be spent in advancing the manufacture of alcohol, etc., from waste fruit. We growers would find the burden of life much lighter; but, of course, these people would probably then have to find another job. Well, that is their business, just as much as it is ours to get the manufacture of waste fruit into a commercial product.

"Common Sense's" tale of woe reminds me of Messrs. Lyons, Menzies, Dr. Page and Curtin, on the vote "Yes" at the last referendum, who tried to make us believe how the dried fruits growers and others would be ruined if we did not vote "Yes." The result of the election showed we can think for ourselves. Now, growers, stand up to it again and put your shoulder to the wheel. If you do you will win.

Yours, etc.,
"DONE MY BIT."

Co-operation Within the Industry

To the Editor, "Fruit World."

Sir,
The recent issues of the "Fruit World" of this past few months have given food for much thought and consideration for fruitgrowers, and it surprises me that your columns are not used more by correspondents regarding the present state of the industry, with suggestions for its betterment.

I agree with much of what "Small Grower" says, but he gives no practical suggestions to overcome the difficulties. The position, as it is at present, is the fault of the growers themselves. A great many of them exhibit a lamentable mentality as regard the business and economic side. It is a most important point, and they are lacking in any effort, as "Small Grower" says, to face the facts and blindly hope that next season will be better, and so it goes on.

The industry as a whole is disorganised, and the individuals comprising it are divided in opinion as to what should be done, and, sad to say, a great many are indifferent about it. The last mentioned, as in every other industry, are the cause of the chaotic position of the industry.

The only remedy I see is "co-operation" and until that comes about the industry will always be in the disorganised state it is in at present.

Co-operation is the remedy for all the complaints which "Small Grower" makes, and I would advise him to get going among his fellow growers. It is the only thing that will place this industry in a position of stability.

My experience in over 20 years at Victoria markets have shown me that until we have co-operation or organisation the position is hopeless. It is getting worse every year. Could I suggest to you, sir, in your valuable journal, that you call a conference of growers to discuss the serious position of the industry with the object of devising some means of lifting the industry out of its present chaotic state. I should like to quote from the report of the S.A. F. & M.G. Association, a most interesting and instructive report, in support of my contention:—

I would appeal to members to remain loyal to the principles of co-operation and so assist the organisation to help each individual grower, and so place the fruitgrowing industry in a better position than ever before.

Facts speak for themselves. What is done in S.A. can be done in Victoria.

Yours, etc.,
"CO-OPERATOR."

Local Fruit Consumption

The Editor, "The Fruit World."

Dear Sir,

I would ask of you space to reply to a letter which appeared in your last issue. "Small Grower's" pugnt is no different from that of all other producers. It is the world's economic impasse as applied to an individual. Solve his problem and solve the international problem. It is not a problem of production but of consumption. To destroy and restrict production in the race or real want is sacrilege, an insult to God. New markets, he says, are what he wants. New markets, says Britain, is what she wants. New markets, say all the nations of the world, are what they want. War is the result of this struggle between nations for markets to which to export the goods their own people at home have not the money to buy.

Now a market comprises not merely many customers, i.e., India, but consumers with money. It is a monetary problem and cannot be solved under the existing financial dispensation until individuals demand that financial institutions serve them and not they, them. This is the issue which is being decided in Alberta, and it could as well be decided by the mandate of the people of Australia. There is no reason, except financial, why Australians should not consume all that Australia can produce. Once this demand is satisfied—and I for one of millions hardly ever taste an Apple—then is the time to export the surplus, and, in exchange, receive what goods Australia is less economically capable of producing. Australia is Australia's best market yet here, as in all other countries, half the people are existing on what cannot possibly allow them to afford what "Small Grower" wants to sell. We have a hundred experts designed to promote production (which is really quite efficient), so now let only one arise, who will insist that consumption be promoted—and there will be more rejoicing over him than over the other ninety and nine!

Small grower, do not sneer at Alberta, at the 500,000 people there

who are demanding that they shall be allowed to consume what they produce. They have appointed an expert to promote consumption... "Do thou likewise."

Yours faithfully,
A. S. GAZZARD.
Norfolk Island, 11/11/37.

Regulation of the Industry

The Editor, "Fruit World,"

Sir,

In further reference to "Small Grower's" letter in your October issue re the financial failure of the season's Apple c.o.p, I feel that I must strongly protest against any form of restriction of output, such being, in my opinion, a policy of despair, or, in the words of Mr. Dunstan, suicidal.

What is required is the ability on the part of the producer to grow fruit and to be enabled to sell the same at a profit to himself and also at a price which the consumer can afford to pay.

Surely it should be apparent that all Governmental regulations, in the form of trade restrictions, tend to make the cost of producing the fruit so high that it is impossible for the fruitgrower to get a payable return for the capital and labor expended in its production. As an instance of this Governmental interference and regulation I would quote the loss of what was a very satisfactory Apple market in Germany.

Mention has been made of the sugar industry. Surely any fruitgrower should realise that the decline in his business has been to a very great extent due to the monopoly enjoyed by the sugar interests of Queensland. Out of the extortional profits of the sugar monopoly a few saps are handed to the fruit canneries, which, in their turn, have an advantage over the housewife, who finds it quite uneconomical to make fruit into preserves because of the prohibitive price of sugar, thus limiting the demand for fruit. This lack of competition for fruit is very serious, and often leaves the grower at the mercy of the factory.

I also see in this proposed dictatorship as to how much fruit should be produced a very serious menace to the progress of the industry. Under free conditions the quality of fruit would be continually on the up grade, but with rigid regulations as to size and variety, I see nothing but stagnation for the industry. Truly, regulation has become a term synonymous with strangulation.

It has been stated that a high tariff wall is the settled policy of Australia; it certainly appears that it has almost settled the fruit industry when in desperation we have to turn to restriction of output.

Yours, etc.,
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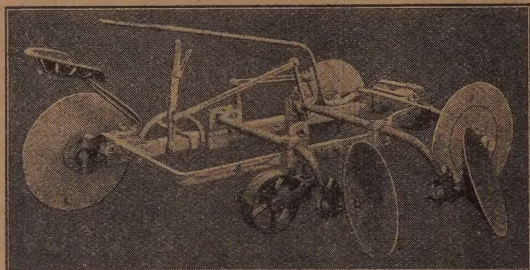
As a Combatant Spray, 2 lb. of “SPREGAN” to 100 gallons of water.

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Double Furrow



The steering arms are drop forged from the best mild steel and the main wheels are equipped with ball bearings.

Two medium horses can work this machine all day without tiring. A machine may be obtained for a trial at any time.

A sturdy, strong plow equipped with reversible discs to enable the operator to plow up to, or away from the trees. Operated by a single lever and with nothing to catch branches of trees. To facilitate the movement of the plow around the orchard the discs are movable and lift clear of the ground.

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Conference of Horticulturists

All States and C.S.I.R. Represented

Pot Experiments Studied

During the course of the conference of horticulturists held at the Burnley (V.) Horticultural Research Station, on November 17-19, and attended by technical representatives of the C.S.I.R., and each of the State Departments of Agriculture, an opportunity was taken to inspect the pot experiments on mineral nutrition of Apples and Pears being conducted by the Victorian Department of Agriculture at the Burnley School of horticulture. It is not often that representative technical officers from

every State Department of Agriculture in Australia and the Council for Scientific and Industrial Research come together to discuss horticultural matters, and the photograph is an interesting record of this very representative gathering. Great interest was shown in the experiments, and it is understood that the conference recommended that funds be made available from the Commonwealth Apple and Pear Grant to the Victorian Department to carry on the work for a number of years.



Above, left to right: P. H. Thomas (Tas.), T. C. Dunne (W.A.), J. M. Ward (Vic.), A. G. Strickland (S.A.), H. Broadfoot (N.S.W.), R. Veitch (Q'land), E. Griffith (Asst. in the experiment).

Lower: C. Barnard (C.S.I.R., Canberra), F. M. Read (Vic.).

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Victorian Fruit Marketing Association

AN executive meeting of the V.F.M.A. was held at the C.T.A., Melbourne, on December 21.

Present.—Messrs. G. W. Brown (Chairman), W. H. Carne, A. S. Harrison (Vice-Presidents), J. B. Mills, W. P. Hutchinson, G. Douglas, F. R. Melor, J. J. Tully, F. Moore, S. Brown, K. Weeding, H. J. Noonan, G. H. Sprague, F. Cave, R. A. W. Bailey, W. Young, J. M. Ward, R. E. Boardman (Secretary).

In attendance also were Messrs. L. G. Cole (President Cool Stores Assn.), F. Pyke, W. A. Thiele and W. P. Mair.

Death of Mr. H. G. Colombie.

The Chairman and Mr. Mills referred to the death of Mr. H. G. Colombie, and the great loss thus sustained by the industry. It was decided, on the motion of Messrs. Carne and Mills, to place on the records a minute of appreciation of Mr. Colombie's services, and to send a letter of sympathy to the widow.

Fruit Insurance.

Mr. Weeding reported conference with Fire Underwriters' Assn. The fire at Doncaster last season had revealed that fruit purchased for export, when in store or in transit, presumably covered by the "Orchard" clause, was in fact not covered by insurance, as the purchaser had no insurable interest until the fruit was on board the steamer, and export certificate issued. The grower would thus need to take out an insurance policy to cover these risks, or appoint the shipper as his agent to do so.

Mr. Moore said that many growers insured their fruit in cool store at, say, 5/- per case, on a naked basis. Insurance claims, however, were subject to average, and thus packed fruit, with, say, 2/- per case value added, was not covered to its full value, as the grower was presumed to be carrying part of the risk; another

point in doubt was as to whether directors of cool stores, although authorised by votes of shareholders, could legally insure the fruit. It might be necessary for growers individually to authorise the directors to take out an insurance cover. Further, unless accurate records were kept, there would be great difficulties of assessment in the event of a fire. With regard to fruit sent on consignment, the shipper had the right to insure because he was thus acting as agent for the grower.

Mr. Pyke stated he took out two policies—(1) for the naked fruit, and (2) for the packing material, and thus only labour costs were not covered by insurance.

It was decided that Messrs. Weeding and Moore, together with a representative of the Cool Stores Assn., be a committee to continue contact with the Fire Underwriters' Assn., and to obtain any needed legal advice to clarify the position.

Sale of Fruit by Count.

Letter received from the Housewives (Vic.) Assn., stating their executive had concurred in the proposals for large fruit to be sold by count instead of by weight.

Nicotine for Sprays.

The Customs Department notified that no excise duty was levied on nicotine extract, and that imported nicotine sprays were exempt from Customs and primage duties, also sales tax. The C.S.I.R. had advised the A. & P. Council that they were looking into the matter of investigation for a cheaper, effective substitute and would write further.

In answer to a question, Mr. S. Brown was advised that tobacco waste was sprayed with a noxious fluid before treatment for nicotine extraction, and that such extraction was done under supervision of a Customs

(Continued on page 10.)

Spraying for Insect Pest and Disease Control

Lead Arsenate and Lime Sulphur

Analysis by Department

Tables of Results

AN article of great interest and importance to orchardists upon analyses made by the Victorian Department of Agriculture appears in the Department's Journal of November, 1937, in which Mr. W. C. Robertson, chemist, reports as follows:—

Prior to the current Codlin Moth season, seventeen samples of lead arsenate were collected and analysed at the departmental laboratory, and in every instance they were found to comply with the standard required by the Act.

This standard, proclaimed in March of last year, reads, "Lead arsenate shall contain not less than 31 per cent. of arsenic pentoxide, and not more than .5 per cent. of water soluble arsenic compounds, both calculated on the dry basis, and the acidity so calculated as nitric acid shall not exceed .2 per cent. Pastes shall contain not more than 50 per cent. of water."

PASTES.

The seven samples of lead arsenate in paste form which were collected all contained less than 50 per cent. of water and gave an average analysis of 32.34 per cent. of arsenic, .14 per cent. of which was soluble in water, whilst the acidity was .08 per cent., calculated as nitric acid. All calculations from the samples of lead arsenate were made on the dry basis. The range of total arsenic in the samples of paste varied between 30.84 and 32.99 per cent. Calculating by the chemical formula of acid lead arsenate the sample showing the highest arsenical content was 99.60 per cent. pure. The average purity of the pastes collected and examined was 97.7 per cent. The single sample of colloidal lead arsenate which was collected, and which is not included in the pastes, gave the following analysis:—

Total Arsenic.	Water Soluble Arsenic.	Acidity (as Nitric).
Per cent.	Per cent.	Per cent.
31.06	.20	.17

The low percentage of arsenic in this sample is probably due to its content of spreader.

Powders.

The nine samples of lead arsenate in powder from which were collected and analysed proved to be of lower quality (purity 96.1 per cent.) than the pastes. This is no doubt due to the larger amount of spreader or wetting agent used in their manufacture. In pastes, these agents are not often detected, the "gel" or "colloidal" nature of the precipitated arsenate being preserved during filtration; this obviates the necessity for any conditioning, whereas in the manufacture of the powder, its colloidal nature is destroyed during the drying process, and suspension must be brought about by the addition of agents which have the power of "wetting" the particles to give the colloidal effect. The average analysis of the samples of powder was:—

Total Arsenic.	Water Soluble Arsenic.	Acidity (as Nitric).
Per cent.	Per cent.	Per cent.
31.83	.16	.09

While this result is most satisfactory, and all the samples gave a good suspension, it should be remembered

that a danger exists in the use of certain spreaders (for wetting agents especially) with any arsenate powder containing a percentage of similar spreader substances.

Spreaders.

The most commonly used spreaders are based on casein. Some on the market, however, are by no means pure caseinates, i.e., they do not consist of casein and a solvent only. Very often they are found to be adulterated with chalk, possibly with a view to stressing their spreading power. The casein solvent is usually lime or "limil," but unfortunately, instances are frequent where sodium carbonate and bicarbonates are used as accelerators, and these alkaline salts in contact with lead arsenate produce soluble arsenic.

The main advantage claimed for the spreader is an even spread of the toxic substance on the fruit, with sufficient adhesiveness to hold the insecticide in position to give maximum results over a reasonable time, irrespective of the weather. But there are several disadvantages associated with spreaders which should be carefully considered prior to a decision as to their use.

The careless use of a spreader of unsatisfactory composition may (a) reduce toxicity by coating the arsenate particles with non-poisonous insoluble matter; (b) cause too great a run-off, thereby leaving a film of arsenate so thin that it will not provide a lethal dose for the insect; and (c) cause reactions with other sprays, such as white oil, to give further soluble substances (ammonia for example) having a great affinity with arsenic. These may dissolve the lead arsenate, and so produce comparatively large quantities

of soluble arsenic, and cause injuries for which the orchardist will be unable to assign any reason. It is highly probable that these reactions are collective, and become more pronounced as the season advances, and the temperature increases. Without going into highly technical details, it will suffice to say that the alkaline salts of some spreaders, wetters, and emulsifiers will tend to react with lead arsenate to produce soluble arsenate, and even in the presence of excess lime of "limil" (when calcium arsenate would form) the amount of arsenic dissolved causes trouble. In this connection the water used, often the only water available, may assist in the production of soluble arsenic because of its comparative impurity and consequent high ammonia content. Especially is this so when water has been contaminated with organic matter and debris.

As regards an even spread producing a toxic film, it is extremely doubtful whether the eye can detect the

minimum spread for a lethal dose. It does not follow that the "blotching" caused by the spray running into drops is a sign that there is not a killable dose of the insecticide between the drops, nor that the visible good "spread" or film obtained so easily when a spreader is used, means a toxic dose of arsenic to the grub, irrespective of where it may enter the fruit.

No matter what the method of spraying, most of the arsenate finds its way into the stem and calyx cavities, and none penetrates the flesh of the fruit. Arsenate manufacturers and salesmen warn their customers of the danger of using the soap spreader when spraying with lead arsenate, owing to the formation of soluble arsenic, yet soap is probably the best wetter and spreader in existence.

It is suggested that ammoniacal emulsifiers and the soda-lime casein spreader should be viewed from the same angle with the object of reducing their use to the absolute minimum.

Table I.—Analysis of Lead Arsenate Samples Collected Under the Fungicides Act: Season 1937-38.

No. of Sample.	Brand.	Water			Sus-pension.
		Total Arsenic.	Soluble Arsenic.	Acidity as Nitric.	
		%	%	%	
No. 3603*	Elephant powder	31.70	.11	.14	Satisfactory
No. 3604*	Elephant paste	32.27	.11	.17	Satisfactory
No. 3605	Lion powder	32.08	.26	.08	Satisfactory
No. 3606	Lion paste	32.42	.20	.04	Satisfactory
No. 3607	Berger's mercury powder	32.46	.17	.06	Satisfactory
No. 3717*	Berger's colloidal	31.06	.20	.17	Excellent
No. 3718	Berger's paste	32.77	.11	.04	Satisfactory
No. 3719	Berger's powder	31.01	.06	.08	Satisfactory
No. 3778*	Cooper's arsinette powder	31.51	.24	.18	Excellent
No. 4187	Sherwin Williams powder	31.56	.11	.06	Satisfactory
No. 4188*	Aero powder	31.72	.09	.08	Satisfactory
No. 4190	Vallo powder	32.43	.17	.04	Satisfactory
No. 4191*	Aero paste	30.84	.09	.04	Satisfactory
No. 4192	Cooper's paste	32.21	.23	.11	Satisfactory
No. 4193	Vallo paste	32.99	.17	.13	Satisfactory
No. 4196	Blue Bell powder	32.39	.23	.06	Satisfactory
No. 4197	Blue Bell paste	32.86	.11	.03	Satisfactory

*Contain appreciable amounts of organic spreader.

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See Results Govt. Analysis — Vict. Journal Agriculture November 1937

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ALBOLEUM (White Oil) - DRYMAC (Derris Dust) Etc.

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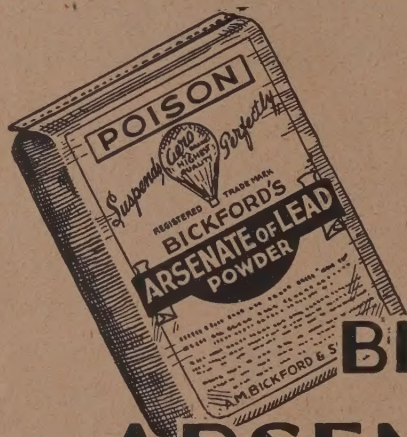
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Interested growers may obtain full particulars from the Manufacturers or from any of the Interstate Agents listed below.

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ARSENATE OF LEAD***By every Test Bickford's "AERO" Brand is Best***INTERSTATE AGENTS:****VICTORIA—**Ramsay & Treganowan Ltd.,
469-477 Latrobe Street, Melbourne.**WESTERN AUSTRALIA—**Felton, Grimwade & Bickford Ltd.,
397 Murray Street, Perth.**NEW SOUTH WALES—**Buzacott & Co. Ltd.,
7-11 Market Street, Sydney.**QUEENSLAND—**Buzacott (Queensland) Ltd.,
443 Adelaide Street, Brisbane.**TASMANIA (Northern Districts)—**Gardner & McKenzie Pty. Ltd.,
64 Cameron Street, Launceston.**TASMANIA (Southern Districts)—**Port Huon Fruitgrowers' Co-op.
Association Ltd.,
Davey Street, Hobart.

It is submitted that lead arsenate in paste form does not require the assistance of any spreader other than white oil, and that the amount of oil used should be carefully measured, and the quality of the water ascertained from the chemist of the Department by submitting a sample for analysis. Water condemned for use with lead arsenate might be eminently suitable for spraying with oil, Bordeaux, lime sulphur, nicotine sulphate, etc.

The use of spreaders of any kind with arsenate powders containing a spreader (which is usual) should be very carefully controlled. It is compulsory for the manufacturer to state on the label attached to any tin, drum or package containing lead arsenate whether it contains a spreader, wetter, or sticker, and any infringement of this requirement will be viewed seriously.

There are certain arsenates being imported into Victoria and distributed under a system of co-operation. Samples of these were not available when this inspection was made, but

will be obtained later in the season. Lead arsenate distributed in this way must comply with the standard.

The analyses of the samples collected are given in Table I.

Lime Sulphur.

During August and September of this year eleven samples of concen-

trated liquid lime-sulphur and one of dry lime-sulphur (powder) were obtained from stocks at the manufacturer's factory or importer's store. With the exception of two, which were a little low in their percentages of total soluble sulphur, all the samples complied with the standard pro-

Table II.—Lime Sulphur.

No. of Sample.	Brand.	Mono-sulphide Sulphur. Grams per 100 c.c.s.	Thio-sulphide Sulphur. Grams per 100 c.c.s.	Poly-sulphide Sulphur. Grams per 100 c.c.	Total Soluble Sulphur. Grams per 100 c.c.
3596	Lion	5.76	1.28	22.40	31.36
3597	Blue Bell	5.37	.77	23.68	30.50
3598	Elephant (T)	6.11	.64	22.08	30.72
3599	Elephant (D)	5.57	.77	20.48	27.33
3600	Buzacott	5.18	.90	21.32	28.49
3601	Buzacott	5.50	.64	21.60	28.74
3602	Neptune	6.65	.51	24.00	32.00
3716	Neptune	6.11	.64	23.68	31.57
4183	Vallo	6.68	.51	23.80	32.24
4184	Vallo	6.72	.51	24.00	32.26
4185	XL	5.66	.89	20.80	27.60
Average of 11 samples		5.94	.73	22.53 (20.00)	30.25 (28.00)
4186	XL dry powder	10.98	1.92	42.66	57.90

Figures in brackets = manufacturers guarantee or standard.

claimed, i.e., "The solution shall contain not less than 28 per cent. of total soluble sulphur, not less than 20 per cent. of poly-sulphide sulphur, and not more than 2.5 per cent. of thio-sulphate sulphur, all calculated as percentage weight in volume."

The analyses of the samples which appear in Table II. appended show that the quality of the brands of lime-sulphur is very uneven. Last year some of the higher concentrations tended to crystallise out after being placed in the commercial containers; this meant a decrease in strength. It was thought at the time that the figures of the proclaimed standard were probably the limit of stable quality for the commercial article. From this year's examination of the brands on the market it would appear that this is not so, because no crystallisation has been detected or reported; yet the average quality of the eleven samples analysed is 22.35 per cent. of poly-sulphide sulphur; .73 per cent. of thio-sulphate sulphur; and 30.25 per cent. of total soluble sulphur.

The range in the percentages of poly-sulphide sulphur varies between 20.48 and 24, while 27.33 per cent. and 32.26 per cent. is the variation in the content of soluble sulphur.

The two samples which are a little low in total soluble sulphur show satisfactory percentages of poly-sulphide sulphur, but they infringe the Act, and render the seller liable to prosecution.

The percentage of sulphur as free poly-sulphide sulphur in the samples collected is approximately 75 per cent. This is a high degree of purity, especially when compared with the low grade of lime sulphur of other years, the percentage of sulphur as poly-sulphide in which rarely exceeded 64 per cent. As poly-sulphide sulphur is the important and most valuable part of lime-sulphur, the degree of purity is of interest.

Recent inquiries dealing with the rate of dilution of the new concentrated lime-sulphur compared with the ordinary liquid raises the question of evenness in quality.

Dilution should be on the poly-sulphide content in preference to the percentage of soluble sulphur.

Liquid lime-sulphur prepared by the old method contained approximately 15 per cent. of poly-sulphide sulphur, whilst the average figure of the samples collected this season is 22.53. This means that 1 gallon of the latest concentrated lime-sulphur is equal to 1½ gallons of the old and less concentrated liquid, and where 1 gallon was used for every 100 gallons of water, to-day a dilution in 150 gallons of water would yield a spray of equal strength.

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"Very; more than one fellow has run into a church through doing it."

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FRUIT TREES AND VINES

Injections and Zinc Points for Pest and Disease Control

ITEMS OF INTEREST are to hand from Mr. W. E. Muspratt, previously of the Murray Valley and now at Littlemore, Queensland, as follows:—

I enclose some articles (copies) that I have pasted in my scrap book, taken from American publications, re treatment of trees, either citrus or deciduous, and vines, by injection or spray for Mottle Leaf, Little Leaf, Rosette and or to fertilise, which may be of interest to your readers.

There is very much still to learn re treatment of trees, etc., by injecting to cure diseases, kill pests or to fertilise, but I fear we must look to America for the bulk of the experimental work, as we in Australia lag far behind in this class of work.

Many of our Australian experimental orchards and vineyards are really only type orchards, etc., those in charge are expected to make the orchard pay its way or at any rate lose as little as possible. Experimental orchards should not be expected to pay their way, except in the discovery of new means of obtaining better results for the man on the land. Much credit is due to the thorough way in which America tackles "the man on the land" problems, whilst Australia is content to sit back and copy their findings.

The trouble I find that in American descriptions of new discoveries they do not give enough detail. As for instance, is the hole bored through Apples trees plugged at both ends or completely right through the tree after treatment? Again, in bores to place sulphate of zinc, no mention is made as to direction to bore or depth of same. The type of bit is, I think, important as a smooth sided hole is required. A Cleaveland bit it, in my opinion, the best for this.

In mixing of sprays one strikes trouble by the lack of details, such as, for instance, how to mix oxide of zinc for spraying. This is now more in use than the sulphide.

I wrote to America for a bulletin on zinc treatment, but received in place the enclosed pamphlet, Leapox—just an advertisement.

Describing the bottle treatment, the announcement states: "Up to half a pound of each nutrient was used per tree in from one to three days." Strikes one as some contract?

In my opinion, injections should if possible be done through or by the Cambium layer. The boring of holes in the trunks of trees must mean a certain amount of paralysed if not

completely dead wood in the proximity, which must have some effect on the tree. The bottle treatment for instance, may be suitable for one treatment, but I hardly think it suitable to do year after year, as a new hole would be required or absorption would be greatly reduced if the old hole were used again.

I have used quite a lot of bolts to repair damage to trees, with no ill effects, also put up a one wire trellis for Muscat. With a few Apple and Pear trees scattered through the area, we bored holes so as to take wire through in a straight line. I consider both varieties of trees had heavier crops afterwards. Later holes were bored in some two acres of Glou Morceau Pears, a foot from ground level, $\frac{1}{2}$ inch diameter, placing $\frac{1}{2}$ inch bar iron in each, protruding $1\frac{1}{2}$ inches out each side, and bent this overlap a bit so as to prevent falling out. These Pears were then about five years old. I saw these trees last year, roughly 20 years after treatment, having good crops and condition very fair, perhaps trees a bit on small side, but probably this was due to stock (Quince) which has a tendency to dwarf trees.

I think the boring of holes through a tree trunk whether filled with a bolt or left open has a definite effect on sap flow, and acts, or has the same effect, as a mild cincture over a long number of years, and that therefore there is a definite limit in its use beyond which it is dangerous to go.

Cincturing done too roughly is nearly as bad. In Currants for years I preached and practised removal of old bark, using narrow cincture, doing as little damage to cambium layer as possible and immediate covering of cincture with waxed cloth. Right now, some 20 years later, this is being advocated, because the careless cincturing of Currants had gradually seriously affected the vines, so making it necessary to encourage a sucker or layer (to replace). If a length of an old Currant vine stem, including the old cincture marks, is obtained and split or sawn lengthwise, one can see that a dark (maybe dead) ring of wood is formed at many of the old cinctures, depending in extent according to roughness in the cincturing. Even in budding if one investigates spot the bud did not take in, you will find the wood of stock underneath discolored.

This shows how careful one must be. In human beings and animals injections are done just under the skin, then why not just under the skin (or

bark) of trees? For small doses a hypodermic syringe with a suitably shaped needle might well do the work, or a plastic dam made of some suitable material, made much after the method used for catching juice exuding from rubber trees, with either a portion of the tree's bark enclosed by said dam carefully removed or cuts made in same place, made in the direction of the grain of the tree.

We all know how quickly cuts made to graft or budding dry out—this applies equally to bores. About 1913 I tried to treat *Sultana* vines for black spot by boring $\frac{1}{2}$ inch holes in trunk $1\frac{1}{2}$ inches deep at angle say of 45 degrees downward (one to the vine), and found I had to have water dripping on to the bit in order to keep hole moist. We treated vines with Bordeaux Mixture, using several thicknesses of darning wool to act as a syphon. The hole was filled loosely with the end of the wool.

The weather turned hot and all black spot disappeared, both on treated and untreated vines, so we got no known results—no ill effects from the Bordeaux on the vines.

I have a few Pecan trees about eight years old which were shy bearers—very much so. Eleven months ago I gave them zinc points made from 24 gauge sheet zinc. We cut $\frac{1}{2}$ inch wide strip and then thus



and thinking these were probably a lot larger than the diamond points mentioned in article, only put in a single circle round tree trunk, points one inch apart, trees, six inches or so in diameter. The small pieces cut as above are inclined to curl at point, so it is necessary to place on anvil or any solid piece of flat iron and hammer out straight.

To put in zinc pieces first I drew a chalk line round the tree to give me the direction; a pocket knife blade, using point only, jabbed into the bark will give point of zinc a grip when pushed in; the next thing is to drive home with light hammer flush with bark, but be careful not to bruise bark. The crop that has set on these trees (bar one with Rosette which looks a lot better) is very promising right now.

I have just given these trees a repeat dose. In my opinion the zinc points or the spray are less likely to damage trees or vines, and one can use the former any old time.

There is a big opening for someone to discover points of some other material or injections that will in their turn cure other ills or kill pests.

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249 Franklin St. - Melbourne
Telephone F 4764

Other items of interest are to hand from Mr. Muspratt, which will be published in subsequent issues.

SOUTH AUSTRALIA.

There has been a good deal of heart burning in South Australia in connection with the quota for Apple export to the United Kingdom. The State's Apple crop is estimated at about $1\frac{1}{2}$ million bushels, quantity available for export 750,000, minimum quota desired for Apples to the United Kingdom 420,000, in addition to 220,000 bushels for the Continent. This State is apparently limited to export markets and local consumption.

Cultural conditions have been very favorable, and a clean crop of first-quality fruit is expected to be harvested.

COX'S ORANGE PIPPIN APPLE.

At the recent annual conference of the Australian Apple and Pear Export Council in Sydney, a resolution was adopted requesting the Department of Commerce to see that officers administering the regulations, adopt color as the basis for defining maturity, and that C.O.P. be deemed sufficiently mature when it has attained the color standard required by the export regulations (Extra Fancy 30 per cent., Fancy 5 per cent.).

The Department of Commerce has applied agreeing to instruct Inspectors to interpret the regulations accordingly, except in extreme instances where Apples, although sufficiently colored, showed obvious immaturity.



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Extract from "BETTER FRUIT," March, 1937, by Dr. R. L. Webster, Entomologist, State College of Washington, Pullman: CODLIN MOTH COVER SPRAYS—"Ever since the imposition of an arsenic tolerance in 1926, and even before that time, investigators have been testing other materials which may be used in place of lead arsenate. Following all these intensive and extensive investigations lead arsenate appears to have certain inherent qualities which place this material foremost as an insecticide for codlin moth control."

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THE VICTORIAN FRUIT MARKETING ASSOCIATION.
(Continued from page 6.)

officer; application would need to be made to the Customs Department to obtain tobacco stems for nicotine extraction.

Victorian Fruit Export.

The Department of Agriculture wrote enclosing report of Mr. S. R.

McColl, Commercial Officer attached to Victorian Agent-General, London, giving valuable survey of the 1937 fruit export season. Mr. Ward stated that this report, among other things, emphasised the need for improved methods if Victoria was to regain her

position in the Apple export trade; he (Mr. Ward) believed that no general improvement was possible until the fruit was handled in District Packing Houses.

There was a general discussion on the subject of arsenical spray residue—the fact that wiping, while removing visible spray marks, did not in

reality remove the residue—it was believed that both washing and wiping harmed the fruit and was ruining the export business—the possibility of shifting the responsibility of wiping to the retailer in England was mentioned—the impossibility of washing Josephine Pears—improved spraying programme to reduce residue—the putrefaction of certain casein spreaders—the varying effects of different oils—the promise given by Mr. Bruce, when Prime Minister, that fruit would not be exported showing spray residue, and the effect of oil wiping in spoiling the taste of the fruit.

It was decided to request Mr. Mills to take up this matter with the Department of Commerce, with a view to improving the conditions surrounding the export of Apples and Pears.

Australian Markets Committee.

The Chairman reported that the A. & P. Council had sought to give a lead to the solution of local marketing problems by the setting up of an Australian Markets Committee; each State would set up its own committee (co-opting members of the trade), and the formation of an Interstate Co-ordinating Committee.

It was decided to create the Victorian section of the Australian Markets Committee by convening a conference of the following Associations: Cool Stores Association, Northern Fruitgrowers', Southern Fruitgrowers', V.F.M.A., and others interested.

Mr. Young said that action was being taken in the Goulburn Valley to prevent the sale of immature Pears.

Letter received from Cool Stores Association, submitting proposals from Mr. F. C. Pyke for (1) an Australian Apple Crop Regulations Committee; (2) proposal from Mr. W. P. Mair that in years of heavier crops, "Domestic" grade be kept off the market, and in very heavy years, "Good" grade also be eliminated.

Apple Publicity.

In answer to Mr. Sprague, the Chairman stated that every effort was being made by the A. & P. Council to secure, through the Customs Department, an excise levy on all fruit sold in Australia, for educational publicity. On the motion of Messrs. Sprague and Tully it was decided to write to the A. & P. Council requesting increased activity in this connection, and that the matter be treated as urgent.

Apple Position in United Kingdom.

Mr. Weeding and Mr. Harrison directed attention to the sales by other States at lower prices than last year, and the unsatisfactory position of the U.K. and Continental Apple market. It was stated that merchants were unable to make substantial forward sales at a price which would give the Victorian growers what they considered a satisfactory return. Other States had made considerable sales at lower values than usual in order to meet the heavy competition of Jonathans and Winesaps from the U.S.A. arrangements for the shipping of which had been made for arrival in the U.K. ports up to the end of May.

Mr. G. Duffell, Ringwood, was accepted as a new member. Decided to hold the next meeting on Tuesday, January 25, 1938.

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Australian Fresh Fruit Export Trade

Season 1937

Apples and Pears

(Report by Mr. W. M. Carne, issued by the Department of Commerce, Canberra.)

SECTIONS OF REPORT DEALT WITH THIS MONTH INCLUDE:— AUSTRALIAN APPLES IN ENGLAND, AUSTRALIAN APPLE BOXES AND THEIR PACKING, AUSTRALIAN PEARS IN UNITED KINGDOM, AUSTRALIAN PEAR BOXES AND THEIR PACKING.

The following will be covered in subsequent issues:—Russet in Apples, Maturity of Apples for Export, Recommendation for Alterations in Statutory Rules 1937 No. 65, Elimination of Apple Varieties from the Permitted List.

SECTION 1.

Australian Apples in England.

The following report is based upon an experience gained during an intimate contact with Australian and competing Apples and Pears in the United Kingdom, from March, 1936, to June, 1937.

Any movement for the improvement in Australian Apples and their packing must be based upon a knowledge of the standards existing in United Kingdom markets. Such Apples must be divided into two types, i.e., those catering for a relatively low-priced market and mainly from sources with relatively low freight and other unavoidable charges, and those affected by high freight and other charges and catering for a relatively high-priced market.

The former Apples are those from United Kingdom (in season) Europe, Eastern U.S.A., and Eastern Canada (particularly Nova Scotia). Those from Eastern North America are mainly barrelled Apples shipped in non-refrigerated holds. The latter Apples are English ex store, and from Western U.S.A., and Canada, Australia, New Zealand, South Africa and Argentine. Such Apples are all refrigerated and carry high freight charges, whilst those from U.S.A. and Argentine carry also a duty of 4/6 per cwt.

Market conditions in U.K. are not stationary. The market is limited and competition is heavy, not only between suppliers of Apples, but also between Apples and other fruits, notably Oranges.

In the competition to obtain the best prices available, improvement in quality and pack is continuously going on. Thus the standards regarded as desirable in the U.K. markets are continually being raised. If Australia is to maintain its position in the Apple market and obtain a reasonable share of payable prices, if indeed it is to avoid losing its position as a result of increasing competition from better fruit from other countries, and even more certainly if it is to displace such competition and sell more Apples overseas, it must deliver its fruit in much better shape than at present.

The main attraction of Australian fruit to the buyer overseas at present is its relative cheapness. This cheapness, however, too often means a return too low to provide a reasonable or even any profit to the grower. Australian Apples must obtain the minimum equivalent of about 8/- sterling to justify export. At that price Apples retail at about 5d. per lb. in London. If the price falls lower, export is at a loss, and yet the retail price falls little, if anything, below 5d.

The point to be emphasised is this. The sale of Apples overseas is competitive and the competition is determined by standards on the overseas markets. Local opinion or comparative standards on say the Sydney market have no bearing on the matter. The results of competitive sales overseas depends on the English buyers' standards irrespective of whether they do or do not agree with the Australian producers' and exporters' ideas. Our objective should be "quality, condition and pack equal to or better than our competitors."

The following is an attempt to show how our fruit compares with that of our competitors and wherein it falls behind.

Competitors in the Australian Apple Season.

Great Britain: This competition comes mainly from gas-stored and cool-stored Bramleys Seedling. It promises to grow, and further compete with Australian culinary varieties. At present most English varieties including Bramleys are on and off in the same years. In 1937 competition continued as late as June. It was relatively light in 1936, and prospects for the 1937 crop are so poor that it is probable that competition will be light in 1938. There seems every probability of a continuance of the price-war, at least in alternate seasons between English and Australian and New Zealand cookers, such as developed in 1937. It may be pointed out that while much of the English Apple production is only fit for the cheap market, there is an increasing production of well packed high-quality fruit. Gas-stored Bramleys are usually very fine fruit, well packed in 40 lb. boxes.

South Africa: South African competition comes mainly in March to May. The greater part arrives before the peak of Australian and New Zealand arrivals. It thus competes in the better paying markets of March and April, and largely avoids the fall of prices which usually occurs in May.

The total quantity is now around 300,000 boxes, but is increasing rapidly from the average of about 100,000 prior to 1936. It is doubtful if it will exceed 500,000, though South African optimists talk of 1,000,000 boxes.

The quality and get up of the South African pack is very even and averages better than Australian. The standard box is used, and trials of high bulge packs are already being carried out with satisfactory results.

The export now includes some fine lines of Granny Smith and Golden Delicious. The principal varieties are Dunns, Delicious and White Winter Pearmain.

Argentine: Though the export of Apples to U.K. was only about 20,000 boxes in 1936, competition from the Argentine cannot be neglected. It included in 1936 and 1937 some very fine Granny Smith, and the best Jonathans seen in England. The color of this variety was remarkable.

Argentine is competing in Europe, and as the young orchards come into bearing, further competition must be expected in U.K. The country is equipped with large modern packing sheds on the best American models. The pack is all in the standard box and is well done on the latest crown pack methods.

Canada: Though Canada sends over fairly heavy quantities of Apples in March and a smaller amount in April, competition from that country is not heavy in the box trade. All boxes used are standard boxes, with a high heavy pack.

U.S. America: U.S. competition occurs with both barrelled and boxed Apples through March and April. After that competition is relatively light, though it persists right through the Australian season. Much of this comes from fruit ex English cool stores. The main competing Apple is the Winesap, usually showing very high color. The Newtown is also well in evidence. All boxes are standard, with a high heavy pack.

New Zealand: New Zealand is a constant competitor throughout the Australian season and with the same

varieties. All boxes are standard and only one brand is used. The high bulge pack is not used. As compared with Australian fruit, New Zealand Apples are conspicuous for the uniformity of the box and pack used, the uniformity within grades, and the greater attention to color grading. The quality of the fruit is on the average not better if equal to good average Australian, but the lines of inferior quality often found in Australian shipments are absent. New Zealand Apples have a better name than Australian taken as a whole.

Australian Apples: As compared with all the foregoing, Australian Apples are unfortunately more conspicuous for their defects than for their qualities, which may be very good or the reverse. It must be remembered that the general public, in so far as it is interested at all in the origin of Apples, and this is likely, does not distinguish between States. The few interested, recognise Australian and Tasmanian Apples.

Though the fruit trade has learnt to distinguish between States, the Fair Prices Committee of the National Federation of Fruit and Potato Trades still divides all the Apples into Mainland and Tasmanian. It may be mentioned here that there is a definite disinclination in England to regard Tasmania as part of Australia, which cannot all be attributed to the attitude of the Agency General of that State. It probably has a geographical basis. English receivers are so used to the get-up, etc., of Australian Apples that they do not usually comment on it except when it is poor relatively to Australian standards. An exception to this is the not infrequent complaint of low net weights as compared with North and South American packs.

To the Australian observer, certain facts stand out when the Australian packs are compared with competitors. They include—

1. Variety of boxes used. No other country has anything like the Australian lack of uniformity.
2. The extraordinary number of brands and marks. It is safe to say that the number of marks from Australia exceeds in number all the marks of all the other countries exporting Apples to Great Britain taken together, not only in the Australian season, but throughout the year. This is due to the fact that nearly all packs from other countries are packed in central packing houses. Australian marks must number between 3,000 and 4,000. New Zealand has one, and other countries have less than 100, usually far less.
3. The wide variation in quality not only between lines but also within boxes. A wide variation occurs between lines from the same as well as from different States. The grades Extra Fancy have little or no meaning except within a mark. The greatest range from poor to good quality is most marked in Tasmanian fruit. Victoria comes next.
4. The wide variation in the packing of different lines. Slack boxes are rare in Apples from other countries than Australia. The poorest packing has usually been from Tasmania, but a marked improvement in that respect occurred in 1937. While well packed lines compare favorably in net contents with lines from New Zealand and South

Africa, and also English packs, they are far behind lines from U.S.A., Canada and Argentine.

5. Deterioration, though it occurs in the Apples from all countries, is much more marked in Australian Apples. Such deterioration includes wilting, pit, breakdown and brown heart, etc. As between Australian States the most deterioration occurs in Tasmanian Apples.

6. In irregular intervals of consignments, the arrival of early consignments after later, and defective distributions, Australia stands alone.

7. In the number of wholesalers handling the Apples from any country, Australia again stands alone. Many f.o.b. purchasers of Australian Apples do not speculate on those from any other country.

8. In the absence of any control over the fruit by which supplies to the market may be regulated and defective fruit reconditioned before sale, Australia compares unfavorably with South Africa and New Zealand.

9. The difficulties and costs of sorting on and delivery of fruit from the docks, of drawing up auction catalogues, and of bookkeeping by agents, are greater for Australian Apples than those from any other country. The proportion of boxes on show in the sale rooms and consequently the proportion sold as "show" or broken boxes is necessarily higher for Australia than any other Apples.

10. The defects of grading in Australian fruit are so marked that buyers can only buy on sample or subject to rebate of not fair average for the grade. U.S.A. and Canadian Apple are bought f.o.b. on the basis of detailed Federal or Dominion certificates which are prima facie evidence of the condition, etc., of the fruit at the time of inspection. of the fruit, etc., when examined, and which is based on an inspection designed to ensure as far as possible a minimum standard.

Whilst auction sales of Australian Apples in general are "with all faults," private treaty sales are all subject to rebate or cancellation if the buyer finds the fruit not up to sample or below fair average quality, etc. It is thus difficult to ascertain a private treaty sale price until the sale has been finalised some time after the original deal is made.

It is evident that the lack of uniformity of boxes, of packing, and in and between grades can be overcome only by the adoption of packing on modern lines in large packing houses. This would also reduce the number of marks and make sorting and bookkeeping easier. It would reduce the number of boxes on show in auction rooms, and the present heterogeneous collection of boxes. It would also enable deterioration due to the chances of shipping and also the variation in prices due to market chances to be borne by all growers supplying one packing organisation, rather than the present system by which some growers or shippers lose and others benefit by causes out of their control.

Deterioration during shipment and irregular supplying of markets can be better controlled by a few powerful organisations working for improvement in refrigerated ships, a minimum period of voyage, and a better arrival programme. Such organisations would determine the range of maturity and season for the shipment of each variety, and thus would co-operate with the inspectors who would be stationed in each packing house.

Improvement in the Australian Apple export is easily possible, but its extent is limited without central packing houses. Maximum improvement is possible only with central packing houses, with the removal of growers control over packing and

marketing, and with reduction in the number of wholesale vendors both in Australia and overseas. Under such a system it would be possible to introduce certificates of legal value for f.o.b. sales such as are given in U.S.A. and Canada, if a continuation of f.o.b. selling be found desirable.

SECTION 2.

The Australian Apple Boxes and their Packing.

The following boxes are used in Australia:—

1. Standard boxes of softwood, similar to those at present in use in New Zealand and South Africa, but not in most cases similar to those used in U.S.A., Canada and Argentina, though built to the same inside measurements.
2. Standard hardwood boxes with softwood lids and bottoms and similar to 1 except in weight. Generally called shandy boxes.
3. Standard hardwood boxes with pliable hardwood lids and similar to 2.
4. Hardwood boxes made to standard dimensions often roughly finished and with rigid hardwood lids. Definitely a different box to 1, 2 and

- 3, though cut to the same inside dimensions.
5. Softwood dump boxes. Very ferrous.
6. Hardwood dump boxes of more or less seasoned timber.
7. Hardwood dump boxes of more or less unseasoned wood.
8. Trays. These are rare.

None of the standard boxes given above conform to the principles of design, apart from specifications of those used in Canada, U.S.A., and Argentina inasmuch as the lid is normally cut to the same length as the bottom. In the American countries mentioned the lid is $\frac{1}{4}$ inch longer than the bottom. Boxes 1, 2 and 3 could be made to conform to the American box by the use of an oversized lid. Another difference between Australian and American boxes is that the top of the former is normally of two pieces, while in the latter 3 or 4 piece unitized lids are rapidly replacing 2-piece lids. The American lids are also thinner than Australian. Box No. 4 cannot be regarded as a standard box as it is incapable of giving the bulge which is an essential feature of the standard box.

Boxes 1, 2 and 3 approach to but do not conform to American standard

packs, and do not really justify the name standard in so far as they do not lend themselves to the American pack. It cannot be assumed that South Africa and New Zealand will continue to use a box and pack similar to those of Australia rather than those of America. This is most unlikely and already there is evidence of a change in the South African pack.

It is a principle of the American box that the lid and bottom shall be pliable, the lid especially so. This enables the box to be packed with a high bulge so as to give a net weight of fruit when packed of more than 42 lbs., though many packing sheds are insisting on and guaranteeing somewhat higher figures. A total bulge of $1\frac{1}{2}$ inches at top and bottom is regarded as the minimum permissible in a properly packed box. The average bulge is about 2 inches, while the maximum may be over 2 $\frac{1}{2}$. Most of the bulge is in the lid. The bulge in the boxes on the U.K. market is usually 1 to $1\frac{1}{2}$ inches and frequently more and practically all at the top, and the minimum net weight 42 lbs. and over.

The so-called standard box in Australia usually has a total bulge of

about 1 inch. The box in U.K. usually shows a bulge of $\frac{1}{2}$ inch, though there have been exceptions to this in South Australian packs and especially in some Tasmanian packs in 1937. The net weight in U.K. ranges from about 37 lbs. upward.

The average difference in net weight between American and Australian packs of the same varieties approximates 5 lbs. of fruit, and may be greater when the latter are slack.

It must be remembered that buyers buy fruit, and that the box is only incidental. Criticism of the Australian standard boxes is really criticism of their inability or failure to arrive in U.K. with a weight of fruit similar to that of the American boxes. The use of the standard box does not reduce criticism of the Australian pack. The standard pack must accompany it, otherwise comparisons encourage criticisms. What is wanted from Australia is boxes giving more fruit without more than reasonable bruising.

Australia is not in a position to set its own pack standards. It is not justified in claiming to adopt American boxes and packs and then turning out both a different box and a different pack. The American boxes and packs, as now used, have been evolved in response to keen competition and to-day set the U.K. standard. They may evolve further, and if so we must keep up with changes which prove desirable. In short, boxes 1, 2 and 3 should be modified to allow them to be used for the modern American Apple pack, namely, the high crown pack. Box 4 should be prohibited as it cannot be used for such a pack.

Boxes 5 and 6 of mostly seasoned timber as used in Western Australia and to a lesser extent in Tasmania, are satisfactory as dump boxes. With the normal flat pack and a slight bulge of under $\frac{1}{2}$ inch, they contain net weights of fruit approximating to the standard box with the normal Australian pack. By using a bulge of 1 inch or more and/or a width of 9 inches or more they have been made to hold a minimum net weight of 40 lbs.

The defects of these boxes are firstly the wide range allowed in width, 8-2/3 to 9 ins., and for 5 per cent. of the boxes a range of width from 8 $\frac{1}{2}$ to 9 $\frac{1}{2}$ ins. Secondly, the thickness and other dimensions of the timbers and consequently the overall dimensions of the boxes are not standardised. Though in practice seasoned boxes do not vary as greatly as the regulations allow, they do vary enough, especially when a high bulge is used to affect stowage. So long as the wide variation is allowed, standard packs are difficult or impossible to prescribe. For the reasons given in connection with box 7, it is not considered desirable to adopt standard specifications for the dump, unless they be adopted only for boxes made of karri and jarrah.

At present it is considered desirable only to limit the permissible departure from the prescribed internal measurements to $\frac{1}{4}$ inch as suggested in my recommendations for alterations to the regulations.

Box 7, which constitutes a large part of the Tasmanian dump boxes is at best only partially seasoned. It has no good points except cheapness. To the defects of box 6 is added an additional one, namely, that the timbers continue to shrink or they warp between the time the box is built and the fruit is taken out of it overseas. It varies much more than the seasoned dump in the dimensions of its parts and is more variable in overall dimensions. It is too unstandardised to have prescribed standardised packs.

Standardisation is not desirable. The box should be eliminated. Any attempt to standardise it would give it

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AUSTRALIAN FRESH FRUIT EXPORT TRADE, SEASON 1937.

(Continued.)

a new lease of life and defeat the movement by the Tasmanian Government to hasten its elimination.

8. Trays. These are of doubtful value for Australian Apples except possibly medium size prime Cox's Orange Pippin.

Limitation of Boxes.

It is extremely desirable for simplicity of stowage and to secure uniformity of pack to reduce the number of permitted boxes in Australia to one, or failing that, to one in any State. In all States except Western Australia, the standard box is either the only Apple box or is more used for export than the dump. Uniformity practically exists in all States except Tasmania. It is desirable that the Tasmanian boxes should be reduced to one, and that one to be the standard box.

It is often stated that Tasmanian Apples do not secure better prices in standard than dump boxes, or when packed in packing houses instead of by growers. In general this is true. It must be understood that only in 1937 did any Tasmanian packers pack the standard box on American lines, and then only a small proportion. This pack has to be extended until it is the rule for the full benefit to be obtained. Again packing house fruit will only get the benefit of higher prices when it really is what packing house fruit implies, i.e., long lines of uniform fruit, not large numbers of boxes with similar labels and dissimilar fruit as many Tasmanian (and Mainland) packs are.

Boxes, packs and lines can only secure special top prices when they definitely and consistently justify it. The matter must be viewed from the buyers' point of view. Large buyers of Tasmanian fruit find many and varying lines in different boxes on show at an auction sale. They know that they have to make up their requirements from many lines. It is not possible for them in the time available to examine all the show boxes in detail for quality and condition of fruit, box and weight of fruit. At best they may pick out lines outstandingly poor or good. For the rest they view the fruit as a whole and fix on general average limits for their bidding irrespective of box, pack, quality of fruit, etc. On that basis they bid. And no other system seems possible. If the packs were standardised, the number of marks reduced, and long lines of similar fruit sent there would be a great difference. The buyer would know in the first place that he would always get more fruit in the standard than the dump box; secondly, he would have fewer marks or lines to look at, and finding the fruit uniform within the lines he would be able to assess the relative values in the several lines and bid accordingly.

Full market value for good fruit cannot be expected unless all fruit is put up in a way that the buyer can compare lines with reasonable ease and speed. Under present conditions the large buyer must bid on a general average basis and then conservatively.

Many times I have seen defective lines secure far above their value and

especially good fruit sold at the same prices as average fruit. As an inspector, I have seen lines badly affected with disorders sold at auction, when neither the buyers nor the auctioneers and their employees were aware of the defects. Adjustments and rebates are frequently made when such defective fruit is found after a sale, but this cannot be done after sales "with all faults." In general, buyers must rely upon making on the swings what they lose on the roundabouts, or in other words they must average up prices to protect themselves against an unknown outturn of the fruit.

Some means of eliminating the dump box from the Tasmanian pack should be found. If it cannot be done under Commonwealth legislation, it may be possible by State legislation or by the shipping companies accepting only one box or by giving preferential rates to one box.

SECTION 3.

Australian Pears in United Kingdom.

Australian Pears have a higher standing in U.K. than Australian Apples. The probable reasons for this are:—

1. The market is rarely oversupplied, and Pears in good condition are generally welcomed.
2. Pears are generally more uniform in quality than Apples. As regards condition, the known liability of Pears to deterioration has led to generally better handling in Australia and better care on board ship than with Apples. For the same reason and also because often Pears are moved to market and are distributed more quietly than Apples.
3. Competition is less active and comes mainly from New Zealand except in March and April, during which months competition from South Africa and Argentina is active.
4. Lack of uniformity in boxes occurs as with Apples. As with Apples, a box of world-wide use arrives with one confined to the Australian trade. The latter, the long Pear box, is, however, not subject to the same adverse criticism as is the Australian Apple box. This is mainly due to the fact that it gives an average net weight of fruit greater than the standard box as at present packed in Australia and usually obtains the higher price.

The recent reduction of the list of permitted varieties has been a definite advance. Any further reduction should be based upon a survey of the prices obtained for the different varieties.

The principal defects of Pears are immaturity and inability to ripen, case marking, over-ripeness and core breakdown, and also low weight of fruit per box. The trade requires hard Pears which will ripen without showing case marks and full boxes. An exception on the latter point occurs with large Extra Fancy Comice and Josephine Pears which are sold at high prices on a number basis.

The long Pear box pack cannot be compared with the standard box packs of other countries because it is so different. In my opinion it results in more box marking of the

fruit than does a crown pack in the standard box, but not necessarily more than the usual Australian pack in the standard box. It is well received if full packed and averages 40-45 lbs. net weight. The usual Australian pack in the standard box compares not unfavorably with South African and New Zealand packs, but is definitely and markedly inferior to the packs from Canada, U.S.A. and Argentina. Having copied the American box we should keep our boxes and their packing up to American standards. The two are inter-related. We cannot work on the basis of a southern standard pack and assume that, South Africa and New Zealand will not change their packs. Indeed, signs of a change are already evident.

SECTION 4.

The Australian Pear Boxes and Their Packing.

Pears are exported in long boxes, standard boxes, and trays in that order of importance. The long boxes are not only most used but are also progressively replacing the standard box. This is due to two causes: firstly, the success of the Victorian Pear export which is almost entirely in this box, and secondly, because the Australian standard pack is subject to criticism on comparison with packs from other countries. The first reason is only partially justified as the Victorian success depends rather on its Pears being handled better than those of other States, than on the box used.

The trays should be reduced to one. When properly packed those used are satisfactory for large Comice and Josephine, but not for small to medium fruits or for other varieties. Reduction to one is desirable for uniformity and convenience of stowage. The type selected should be similar in two dimensions to the Pear box finally selected.

The long Pear box is, in my opinion, not superior or even equal to the standard box properly made and packed. It has, however, certain advantages. It is not used in other countries and is therefore not subject to comparative criticism. It is not bulged but flat packed, a fact which probably makes its packing easier to Australian packers. It is already packed satisfactorily by many Australian packers. It usually contains over 40 lb. of fruit both when packed and on arrival in U.K. It is acceptable to U.K. buyers. Its specifications should be standardised.

The standard box originated in North America, and is used in U.S.A., Canada and Argentine. Both the box and the pack differ from those used in Australia. It must be emphasised that the box itself is of relatively little importance in the sale of fruit. What the buyer wants is fruit in standard quantity, condition and quality. The box is only a means of obtaining the quantity without affecting the condition. To the buyer a standard box implies a box giving a standard pack. Both the box and the pack standards are determined by American users. Although we have copied the box (but inaccurately) we have not copied the pack. Therefore the U.K. buyer refers to the American Pear box and the Australian 2-

bushel box. Yet in Australia both are supposed to be the same.

The main difference between the boxes is that in America (including Canada and Argentina) the lid is now generally unitized and invariably longer than the bottom by $\frac{1}{2}$ inch. The Australian box is generally built with a two-piece lid of the same length as the bottom. The American lid is usually $\frac{1}{2}$ in. or less thick, the Australian $\frac{3}{16}$ in. The difference in packs is also definite. The normal American pack is a crown pack giving a bulge of 2 $\frac{1}{2}$ to 3 inches when the lid is nailed on and a net weight when packed of 45 to over 50 lbs. The Australian box is usually packed with a more or less flat pack which gives a bulge of $\frac{1}{2}$ to 1 in. when packed. The net contents vary from about 38 to over 40 lbs. Strawboards for protection are used in the Australian pack. In America pads are frequently substituted at the top and bottom and the fruit in the bulges is protected by cardboard collars.

To produce the American pack in Australia the box specifications will have to be altered and crown packs adopted. It is not sufficient to have a high pack, as without crowning severe bruising is almost inevitable in lidding. Wiring will probably be essential even if the boxes are built of hardwood. The present pack of the Australian Pears in the standard box compares favorably with those from New Zealand and South Africa. However, we cannot assume that the latter packs will not be changed. The South African Co-operative Deciduous Fruit Exchange is already experimenting with high bulge packs and with good results.

The present unsatisfactory position in Australia is that in New South Wales the standard box only is used while in South Australia, Tasmania and Western Australia a few long boxes are also used. In Victoria the long box is the main one, though there are a few standards. The long box is slowly extending in States other than Victoria, leading to a greater lack of uniformity. As uniformity of box (and pack) is very desirable both for marketing and stowage, steps should be taken to reduce the permissible boxes to one (with its corresponding half box) in any State. As the Commonwealth is probably unable to legislate to this effect, the following possibilities should be explored:

1. The shipping companies to decline to lift more than one type of box in each State, or alternatively, to penalise one type by higher freight charges.
2. The State Governments to pass legislation allowing only one type of box to be used in each State.

If neither 1 nor 2 can be obtained, uniformity can only be obtained by the Commonwealth eliminating one type of box. Whilst the fixing of the standard box would not arouse opposition in States other than Victoria, it must be remembered that the latter is the principal Pear State and that about one-half the boxes used in 1936 were long bushel and over one-half the total quantity was shipped in the long box. Uniformity could be obtained with less opposition from growers if placed on a State rather than a Commonwealth basis.

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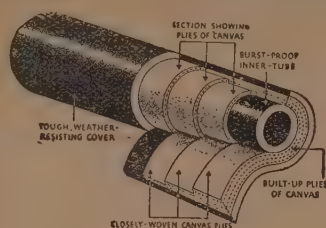
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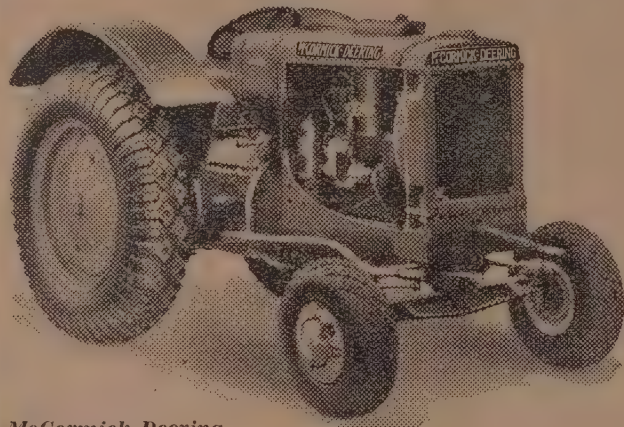
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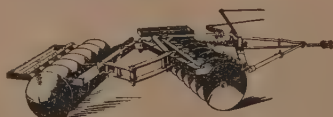
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New Zealand Crop Prospects

WE have received the following detailed crop prospects from the Director of Horticulture (Mr. J. A. Campbell), of the N.Z. Department of Agriculture, up to December 7. It covers all main producing districts and the chief varieties of fruit.

Auckland.—Apples: Good, Gravenstein and Dunn's patchy. Lemons and Oranges: Heavy blossoming. Nectarines and Peaches: Light. Pears: Good. Plums (Japanese): Patchy. Fairly good crops in some parts of district. Strawberries: Medium. Tomatoes: Hothouse, good; outdoor looking well.

Hamilton.—Apples: Good crops all varieties, with exception of Dunn's, which are light. Pears: Heavy. Stone fruits, Lemons and Oranges: Good. Strawberries and Gooseberries: Average.

Tauranga.—Apples: Crop patchy. Delicious, Gravenstein, Jonathan and Granny Smith good, others average to light. Apricots: Light to very light. Lemons: Very heavy main crop blossoming. Oranges: Sweet, good blossoming; Paorman, blossoming appears patchy. Peaches: Average to light. Pears: Good to light. Plums (Japanese): Light to good. Tomatoes: Average plantings still backward. Walnuts: Good.

Gisborne.—Apples, Pears and Peaches: Average to heavy. Gooseberries, Nectarines and Plums: Average. Apricots: Average to heavy. Lemons: Average. Summer crop developing. Strawberries: Light. Tomatoes: Outdoor plants backward, due to cold Spring temperatures. Average glasshouse crops. Walnuts: Average.

Hastings.—Apples and Pears: Heavy. Peaches, Quinces, Plums and Cherries: Good to heavy. Nectarines and Apricots: Good to average. Lemons and Oranges: Average. Walnuts, Raspberries, Strawberries and Gooseberries: Normal.

Masterton. Apples and Gooseberries: Good to heavy. Cherries: Light. Nectarines and Peaches: Very light owing to late frosts. Pears: Light to medium. Plums: Very light. Raspberries and Strawberries: Good. Tomatoes: Indoor, heavy crops promising; outdoor plants retarded by cold weather.

Nelson.—Apples: Fruit set generally good. Cox's and Statesman heavy; Dunn's Jonathan and Dougherty, good; Delicious, light to medium; Sturmers, medium to good. Other varieties good. Apricots, Gooseberries and Strawberries: Good. Cherries: Medium to good. Lemons: Moderate crop anticipated. Nectarines: Moderate to good. Peaches: Moderate to heavy. Pears: B. Bosc, W. Coles and P. Barry, good; W. Nelis, patchy to light; Keiffers, light; W.B. Chretien, moderate to good. Plums: Normal. Raspberries: Indications of good crop.

Tomatoes: Indoor and outdoor show signs of good crop.

Mapua.—Apples: Good average crops. Pears: Crops very patchy. Winter Coles, Beurre Bosc and P. Barry, light to fair. Winter Nelis, Williams' Bons, and other varieties, fair to good.

Motueka.—Apples: Splendid setting of fruit on almost all varieties. C.O.P., heavy; Delicious, only average. Apricots, Cherries and Strawberries: Average. Gooseberries, Peaches and Raspberries: Good average. Nectarines: Fair setting. Pears: Very patchy, especially W. Cole. Some parts of district heavy crop. W.B. Chretien looking well and showing fairly heavy crops. W. Nelis, good. Plums: Fair to average. Tomatoes: Outside plants coming away well.

Blenheim.—Apples: Average to heavy, except where damaged by frost. Apricots, Cherries, Raspberries and Strawberries: Average to heavy. Gooseberries: Indications are for a heavy crop. Lemons: Crop generally light due to frost injury. Nectarines: Loss through frost injury approximately 20 per cent. Peaches: Crop fair to average all varieties. Loss through frost injury approximately 20 per cent. Pears: Crop all varieties light. Plums: Light crop due to frost; approximately 30 per cent. loss. Tomatoes: Fair to average crops hothouse; outdoor average. Walnuts: Crop generally very light due to frost injury.

Christchurch.—Apples: Heavy. Apricots: Medium to light. Cherries: Medium to heavy. Gooseberries, Raspberries and Strawberries: Average crops. Nectarines: Medium crop. Peaches: Average crop, except where damaged by frost. Pears: Heavy crops of all varieties. Plums: Average. Plums (Japanese): Heavy. Tomatoes: Average crop under glass. Outdoor setting average crop in early districts. Walnuts: Heavy crops where not damaged by frost.

Dunedin.—Apples and Pears: Severe frost losses of approximately 50 per cent. in individual orchards. Apricots: Fair average crop. Cherries: Fair to medium crop; approximately 30 per cent. loss through frost damage. Nectarines and Plums: Crops generally good average. Raspberries: Below average. Strawberries: Medium. Peaches: Crop generally good average. Walnuts: Fair to medium crop; approximately 30 per cent. loss.

Alexandra.—Apples: Generally a heavy set. Apricots and Plums: Below average. Cherries: Average. Nectarines, Peaches and Pears: Above average. Strawberries and Walnuts: Heavy. Tomatoes: Indoor heavy; outdoor probably smaller plantings.

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Mildura (Victoria) As A Fruit District

Visit to Some Fine Orchards.—Irrigation Put to Work.

(By Our Travelling Representative.)

IN recent issues we have published reports from our travelling representative who made an extensive visit to orchards in the Murrumbidgee Irrigation area. These were appreciated by many readers who have expressed their pleasure at the details covered and the descriptions given of orchards visited and cultural methods noticed. Our representative is now in the Mildura district, and forwards the following review of the many orchards seen and the results of irrigation which have made Mildura one of the most important fruit-growing centres in Australia, combining as it does, both citrus culture and the production of particularly fine dried vine fruits.

In the Mildura Area.

Mr. D. Lambton, of Mildura Sth., cultivates 30 acres of vines (20 Sultanas, 6 Zante, and 4 Gordo Blanco).

Only a few years ago he purchased this property, which had been neglected for some time, and by scientific systematic management, combined with much hard work, has brought the whole place into a highly profitable concern, very pleasing to the eye.

The vineyard is deeply ploughed after all the fruit is gathered, and the season's final irrigation in April. Cover crops with manure are then sown. Every other space between the rows being "ditched out" in the centre 2 ft. deep, and subsoiled, the vine prunings are buried in this deep furrow and ploughed under in August with the green cover crops.

In the following year, the intermediate row is treated in this way. The operation cuts the vine roots and causes a lot of new feeders to grow, which Mr. Lambton claims to be beneficial.

Disbudding, topping and cincturing are practised and the results prove the method to be a good one. Moderate watering and continuous top cultivation to conserve moisture, aerate the soil and check weed growth during Summer is the "modus operandi."

Mr. G. Potts, of 15th street, Irymple, who is the patentee of "The Potts" combined plough, vine hoe and cultivator, which can be purchased at a reasonable figure and will do all the vineyard cultivation, grows successfully 20 acres of Sultanas, Zantes, and Gordos and, since the adoption of most up-to-date methods, has had fine results. Mr. Potts graciously shows visitors around, pointing out the benefits of certain systems employed.

At the time of writing, when Mr. J. B. Peeble's property was visited, spraying vines for Black Spot and leaf eaters, and the cincturing of Currants was in progress. The spray cart being drawn by two splendid Clydesdale horses and the pump automatically driven by the revolving wheels and cogs, so that when the cart moves the 6 nozzles, three on each side suitably placed, force the control spray on to the vines. By this method large areas are covered in a few hours.

In addition to vine culture, some choice pens of Australorps are in evidence, also a nursery of vine cuttings are being rooted for further plantings in the near future.

Although vine growing for Raisin making is the major occupation at Mildura, other avenues of rural industries are entered into, poultry keeping for egg production is one of these "extras."

Mr. S. Hodgson, of Mildura South, some 15 years ago established a consistent laying strain of Australorps, of even type, which he has kept right

through. These, he states, have come to his financial rescue on several occasions. At present about 500 pullets are growing up to take the place of the old ones next February. This blocker receives many a hint through the pages of the "Australasian Poultry World."

Amongst the progressive vignerons of Mildura is Mr. Paul E. Greatz, who, with a gang of men, was trenching his vineyard and laying pipes to connect up with the main drain, to combat seepage and saltage.

These pipes are put down 5 ft below the surface between every fourth or fifth row of vines, and connect with a head drain of pipes somewhat lower and then to a silt well, which is cleaned out by the blocker. This is then joined up by pipe to the Commission's main, also provided with silt wells, still lower; these are kept cleaned out by the Water Commission.

The mains discharge into Lake Hawthorn, an artificial lake situated between Mildura and Merbein. This shallow water provides a feeding ground for water fowl and incidentally gives good shooting. By these measures it is hoped to overcome seepage and saltage menace, which has been a drawback all along. Red Cliffs has a similar scheme, which empties into Lake Cardross, also a man-made one.

Some years ago, in the early days of Red Cliffs, the Government had sent 700 1,000-gallons tanks to the ex-soldiers and before any rain had fallen to fill the tanks, a wind storm blew them in all directions, threatening to demolish buildings and completely wreck the settlement. This is known to history as Tank Week, and is probably unique.

The "ditching system" to dispose of and rot the vine prunings is not the only one in vogue, some believe in raking up the sticks by horse implements, placing them in heaps in case a frost threatens, when they are lighted up to combat this enemy. On several occasions this method has proved efficacious. This system also lends itself to spring-tooth cultivation instead of discs, providing that the green manure has been well buried in the early Spring.

Others distribute the cuttings throughout the green covers, use the "Howard" rotary hoe, chaff up the cuttings and Beans, and plough in deeply. This makes a good job and simplifies after cultivation and the drawing of furrows for irrigating, as well as helping to keep the soil open.

Irrigating at Mildura.

The following dates are approximately the times of watering in this area:—September 1, November 1, December 1, January 1, April 5, and perhaps another irrigating, if required.

Experience has taught the benefits of dry air during the processing of Currants and Raisins in February and March; this is one reason why Mildura leads in quality "Sunraysia" products.

Nine "water gangers" superintend the distribution of these waters, notifying the "blockers" well beforehand to have everything ready; for if their turn is missed the vines will go thirsty until the next month, with resultant losses, for it must be remembered that here is Victoria's hottest and driest area.

The channels are allowed to run dry between the irrigations, for it is only when the pumps are working that water is available. It is stated that



Dried Fruit Racks.

the water is so valuable that none is wasted, quite unlike some irrigation colonies, where the adjacent roads are inundated.

The cost of water to these blockers is about 55/- per acre per annum, with some extras, but sometimes this cost varies. Since the construction of the Murray River Weirs which raises the source, the water does not have to be lifted so high by the pumps, consequently more water is delivered to the main channels in a given time and with better regularity. The time allotted is 2 days for 10 acres, so a 30 acre block takes 6 days. All these lands are surveyed in 10 acre lots, but most growers control 30 or more acres, and there are also some larger holdings.

It has been stated that one diligent man can do all the work on 20 acres of vines, except in the picking and drying season, when an army of workers visit Mildura and districts to do this work.

At Wentworth, just below the confluence of Rivers Murray and Darling, Australia's two largest streams, is Lock and Weir No. 10, by road 22 miles from the town of Mildura.

Weir No. 10 holds the water back to Weir No. 11 at Mildura and this is the source of water pumped for irrigation at Merbein and Merbein W. on the Victorian side, and for Coomealla, Pomona and Curlwaa on N.S.W. side of the Murray River.

Weir No. 11 also forms an inexhaustible reservoir of water, from which is raised the water for irrigation at Cardross, Red Cliffs, Irymple, Mildura and other smaller places. To-day these pumping stations work at concert pitch, to supply life blood to the trees and vines, the products from which are known under the mark of "Sunraysia" all the world over.

All this vast area was a barren Mallee desert 50 years ago, but is now keeping the wheels of industry running and making the heart of man glad. Again "hats off" to the Chaffey Bros., Mr. Deakin and the colleagues who supported the Murray Valley Irrigation Scheme, not forgetting the pioneer blockers.

The Water Harnessed.

The drought of 1914 caused many streams to dry up, even the mighty Murray ceased running in parts, and these factors awakened the people of Australia, especially those of N.S.W., S.A. and Vic., to the dire necessity of constructive weirs and locks to impound these precious waters that ran away to waste in times of plenty.

Prior to this no combined effort had been taken. N.S.W. claimed ownership of the Murray. S.A. pleaded for it for navigation purposes, looking for its trade. Victoria commandeered it for irrigation purposes. This raised the issue and precipitated the forming of "River Murray Commission," with each State and Federal representatives. These parties, separately and collectively, as far as cost goes, have built locks, weirs and barrages at suitable positions, costing scores of millions of pounds.

Now we have the Hume Weir, twelve miles above Albury, in the highlands, with a heavy Winter rainfall and a catchment of over 6,000 square miles, forming a reserve to draw on in times of necessity.

S.A. was the first to complete her 9 weirs, with Wentworth, N.S.W., and Mildura, Vic., following. The Mildura and Torrumbarry Weirs are different in construction from the others, being movable, and consisting of braced steel trestles, each 24 ft. long and weighing 10 tons, so that they can be run up on to a specially constructed elevated road for overhauling. The plan permits navigation without using the locks at flood time, and also frees the surrounding country of the probability of inundation.

The Weir at Mildura is 573 feet long, connecting Lock Island with N.S.W. and with Victoria. The canal between the island and Mildura forms a splendid natural place to build the locks and gates.

These weirs really form a succession of water steps every 40 or 50 miles, and it seems a pity sometimes that this navigable stream is used to a very small extent for carrying goods since motor lorries and railways are the carters of to-day.

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CITRUS NEWS and NOTES

Citrus Trees— Their Food Requirements

A CITRUS tree does not grow at a uniform rate, but makes three of more growths of shoots and leaves each year. The times when these growths occur, and the degree of their development, may vary with local conditions, the availability of plant foods and methods of tillage and irrigation.

In the Spring, shortly before blossoming, the heaviest growth occurs, and from this stage, particularly until the approach of the wet season, the soil should be maintained in good cultural condition to enable the trees to obtain the essential plant foods by means of a healthy, vigorous root system. There is a smaller and irregular growth of twigs and leaves about mid-Summer, and a third growth in the Autumn.

In the trunk and main branches, dissolved mineral matter taken from the soil by the roots passes upwards to the leaves, and elaborated plant foods pass downwards from the leaves

to the roots. Citrus trees in healthy condition do not shed their leaves before the new ones have become at least partially developed; therefore, the heaviest leaf fall usually takes place after the Spring growth.

Careful tillage and drainage, although absolutely necessary for successful fruit growing, are not, however, sufficient to maintain the fertility of the land from year to year without the aid of organic manures or fertilisers. Growers from practical experience have learned the truth of this statement. Owing to the difficulty of procuring sufficient quantities of organic manure, mineral fertilisers are applied, which supply nitrogen, phosphoric acid, and potash to the soil, each constituent being necessary for the production of good fruit and the maintenance of healthy trees.

Certain points relative to the effects that these constituents are likely to have on the development of the trees,

and on the production of the orchard, are worth considering, in order that growers may be able to decide as to their own particular requirements.

The effects of a generous supply of nitrogen are much more apparent than those of either phosphoric acid or potash. Nitrogen stimulates vegetative growth and large applications of it will increase the amount of rag and the thickness of the rind of the fruit. Insufficient nitrogen, however, is indicated by yellowish-colored leaves, and the trees generally have a stunted appearance.

Unless adequate phosphoric acid is available the fruit does not develop normally. Phosphatic manures promote root development, and heavy applications hasten the maturity of the fruit.

Large quantities of potash will cause the rind of the fruit to be much thinner, and have a marked influence in improving the keeping and carrying qualities of the fruit. Potash also increases the vigor of the tree, and intensifies its resistance to adverse conditions.

These facts show that these three plant foods must be judiciously balanced to meet the requirements of the trees.—H. H. Collard, in "Queensland Ag. Journal."

IRRIGATION FOR LEMONS.

Albany, W.A., Grower's Experience.

MR. W. GREEN, a mixed farmer near Albany, W.A., has succeeded in re-habilitating a grove of old Lemon trees by the use of irrigation. The "W.A. Primary Producer" contains the following interesting story of the returned soldier's efforts.

Mr. Green's holding is a property taken up over half a century ago by a German settler, and farmed in turn by successive owners until the present occupant took possession about 17 years ago, on his return from war service. He has a homestead block of 50 acres about 3½ miles from Albany, adjacent to the main Albany-Perth-road. A cluster of Lemon trees, stunted in growth and yielding a poor specimen of fruit, then stood about 40 yards from the homestead, being sheltered by a timber glade and out-buildings. Although given attention, the trees failed to make headway for a few years, but gradually improved until a crop of decent dimensions was yielded in the Spring for local marketing. They made wood growth rapidly and flowered well, and with the passage of time the quality of the output also improved.

At the beginning of the present year, however, Mr. Green decided to utilise water from a permanent spring that he had located about 300 yards from his home. He installed a windmill and set of tanks close by, and then systematically trenched to shallow depth only round the trees and at intervals between them. With the advent of continuous water supplies the fifteen trees thrived amazingly, and are producing fruit of luscious quality and excellent size and shape.

The trees are set in a mixture of yellow sand and light clay, and from their previous listlessness they have been transformed into magnificent growth. Despite the past Summer having been one of the driest on record locally, the spring gave a flow of over 2,000 gallons daily, and it is estimated that its greatest capacity is about 6,000 gallons.

In the past four months Mr. Green has made a net profit of nearly £40 from the sale of Lemons to local buyers. He is competing with fruit imported from South Australia, which is landed at Albany, it is stated, at about 17/6 per dump case, against his standardised price of 10/- per dump case. He has found it difficult to cope with the demands in the Summer months, and will be kept busy picking Lemons for many weeks yet. He also predicts that the Spring crop this year will treble that of previous years under the new system of irrigation. One tree with branches of about 30 yards in circumference has yielded ten dump cases of 14 dozen Lemons each this season, and is still bearing well.

EARLIER AND SWEETER.

Manganese For Oranges.

Oranges that mature two to three weeks earlier and yield a sweeter, richer-colored juice have been grown in Florida by adding small quantities of manganese sulphate to the soil, in experiments of the United States Department of Agriculture.

Previous experiments with manganese on citrus trees in Florida showed that this element definitely helped the trees to overcome a nutritional disorder known as chlorosis. Further work has demonstrated that manganese, in addition to hastening maturity, increases the sugar content, the weight, and the yield of the fruit.

Two pounds of manganese sulphate were applied to Orange trees in March, June and November, the last application soon after the fruit was picked. The reaction was immediately favorable on acid soils and even more so on those nearly neutral. Within two weeks after the first application, manganese content of the leaves increased. But decreased while the fruit was maturing, showing the importance of manganese in fruit formation.

Where manganese sulphate was applied, the Oranges contained slightly more sucrose, glucose and fructose—sugars that give the fruit desirable qualities.

FERTILISERS FOR ORANGES.

Effect Upon Sourness.

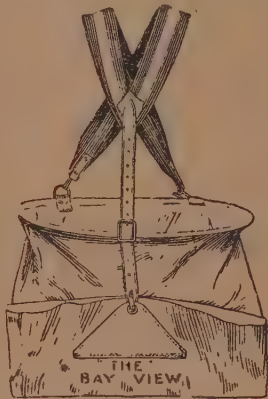
In a report appearing in "Tropical Agriculture" (U.S.A.) of last April, appears some comments upon the effect of fertilisers upon Oranges.

The acidity of Valencia Oranges was increased by the application of potassium sulphate (25 lb. per tree) but was decreased by applications of either superphosphate or bone meal (40 lb. per tree). Phosphate fertilisers also increased the juice content of the fruit. Fertilisers had relatively little effect on the total solids in the fruit, changes in the solids to

acid ratio being due chiefly to changes in the amount of acid. The effect of the fertilisers, particularly bone meal, was greater when they were applied in trenches dug around the trees to a depth of nine inches, and then forked into the root zone, than when they were applied broadcast on the surface of the soil about the trees and then forked in. Phosphate fertilisers increased the phosphate content of the juice from 0.027 to 0.030 to 0.038 per cent., but had no effect on the potassium content. Potassium sulphate increased the potassium content of the juice from 0.20 to 0.21 to 0.24 to 0.35 per cent., but had no effect on the phosphate content.

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REDUCES YOUR PICKING AND PACKING COSTS.



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- 1—Can be used for any class of fruit.
- 2—Allows the use of both hands in picking.
- 3—No bruising of fruit. Weight carried on shoulders instead of back of neck.
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- 5—No hooks to injure trees.
- 6—No complicated fixings to get out of order.
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SIDES (Plain or Vented)	17 x 14	500's	
	17 x 13	500's	
TOPS AND BOTTOMS	17 x 8	1,000's	
CANADIAN CASES—			
SIDES	17 x 10	1,000's	
	17 x 10½	1,000's	
TOPS AND BOTTOMS	17 x 11	1,000's	
PEARS—			
SIDES	13 x 6	1,000's	
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Also Combination Packs of:—

DUMPS	CANADIAN	PEARS
(500 17 x 13)	(500 17 x 10)	(334 13 x 6)
(500 17 x 8)	(500 17 x 11)	(334 13 x 12)

Re-working of Citrus Trees

To Better Varieties.

Where failure was experienced in the re-working of citrus trees in the Spring months, the work may be continued. On inland areas particularly, it is desirable that buds or grafts be established and make a satisfactory growth before next Winter, advises the "N.S.W. Agricultural Notes."

In cases in which Spring re-working was accomplished, disbudding of unwanted shoots will be necessary. To speed up identification of buds and grafts it is a good plan to put a dab of paint near the union.

Any trees severely re-headed may need re-whitewashing to minimise sun scald.

In coastal districts, in particular, where trees have had large limbs either cut back or totally removed, it is necessary to sterilise the wounds, and subsequently to paint them with a bituminous cover or good lead paint.

Much depreciation results from "die-back," and the entrance of wood rotting fungi if these wounds are neglected. Sterilisation can be done with Bordeaux paste, Condyl's crystals (one teaspoon to pint), or other fungicide, and this should be followed a day or two later by the use of the paint or bitumen preparation.

Any time available may be utilised to continue the work of slightly pruning up citrus trees clear of the ground. The centres of trees may also be slightly opened and dead and spent wood removed.

Young Lemon trees may be shaped to a symmetrical form, any strong growths in moderately upright positions being cut back severely to encourage the development of additional and stronger limbs. Trees weakened as a result of past heavy bearing should be pruned back and well fertilised to aid a more rapid recovery.

RENMARK BUYS FUMIGATOR PLANT.

The Renmark branch of the Murray Citrus Growers' Association, at its special meeting on December 7, decided to purchase a fumigating plant consisting of 12 tents and a blower. In discussing the menace of red scale, Mr. Seary reported on the Berri scheme and Mr. Ray Moss impressed the importance of fumigating.

It was agreed that all growers undertake to contribute one halfpenny per bush, case of production, from which fund all spray material would be bought. Growers to find own labor and pay 3d. per tree towards the fumigating plant and 1d. per tree for hire.

Citrus Worth £20,000,000

A South African Industry.

Dependent Upon Export Trade.

In presenting the Director's report and the financial statements for 1936 at the eleventh annual general meeting of the South African Co-op. Citrus Exchange Ltd., held at Pretoria, the Chairman, Mr. A. Cramer, gave a very interesting account of the past progress and the future prospects of the South African citrus industry. The following is an abstract of some of the principal points in his address.

"During the 1936 season the exports of citrus fruits reached the record figures of 2,750,421 packages, or 155,190 shipping tons. The average price of 14/11.5 pence a case realised on overseas markets for Oranges was a welcome improvement on the ruinous figures of 12/1.5 in 1934 and 11/10.2 in 1935. Grapefruit prices were low in 1936, averaging 11/7 a case compared with 12/2.8 in 1934 and 15/10.2 in 1935.

"The fruit marketed through the Exchange in 1936 represented 75.45 per cent. of the total citrus exports, and the Exchange's proportion realised £1,464,587 gross.

Price Levels for the Past Few Years.

"The average price realised for Oranges in 1936 was an economic one in that it left a margin for the producer. It cannot, however, be too strongly emphasised that the prices for 1934 and 1935 were sub-economic and that, if those low price levels continued, a considerable part of the Union's citrus industry must inevitably disappear."

NEW USE FOR LEMONS.

One of the services provided members of the California Fruit Growers Exchange is that of finding new uses for citrus fruits, especially those that will not compete with the fresh fruit which, of course, is and probably always will be, the principal outlet for all citrus fruits. However, its laboratory workers do not stop at this, for they are continually on the lookout for new uses for the fresh fruit that may enlarge the demand for it.

According to W. B. Geissinger, advertising manager for the exchange, a very promising new use has recently been investigated by the organisation which seems to offer great possibilities in the way of quickly increasing the consumption of this fruit. The new use is Lemon juice, soda and water as a laxative and tonic.

To acquaint the general public with this new tonic, the advertising appropriation of the exchange has been materially increased and a year around advertising campaign is to be inaugurated explaining the tonic value of California lemons.

Tasmanian News and Notes

Weather and Crops — Pests and Diseases Berry Fruits Prospects

THE monthly report for December, issued by the Tasmanian Department of Agriculture in December, gives information received from district Orchard Inspectors and other relevant advice as to fruit conditions in Tasmania.

Weather and Crops.

The month of November was exceptional in many ways, and mean average temperatures throughout the main districts were three or four degrees above normal, whilst on the 26th the highest temperature ever recorded for this month (98.4 deg.) was experienced. Rainfall was low in all districts, being little more than one-third normal in many areas. The following records supplied by the Meteorological Bureau indicate the position fairly clearly: — Hobart, 75 points, as compared with the average of 245; Franklin, 116, compared with 304; Launceston 86, compared with 183.

With such dry conditions it is not surprising that fruit trees have been affected in some measure, and a fairly heavy drop is reported from all centres and on most of the main varieties. Scarlet is perhaps the only variety which is uniformly heavy, though in certain districts other varieties show a good promise. Pears are generally light, but with the recent rains both Apples and Pears should benefit materially as regards growth and general development. Data relating to crop prospects is at present being collected, and a detailed report on this aspect will be published shortly.

The vagaries of the weather are further illustrated by the fact that hail has been responsible for considerable damage in localised areas. Following the severe heat on the 26th much spray injury occurred, and where growers applied lime-sulphur-arsenate of lead mixtures about this period fruit has suffered from russet and Eye Scald.

Pests and Diseases.

Up to the present time orchards are looking well and the young fruits are clean and well developed where the usual spraying has been effectively carried out. With the conditions experienced, however, Codlin Moth and other insect pests are likely to be particularly active, and growers are advised to keep a good lead arsenate cover on their fruit and foliage. Some spot has been noted on Cleopatras, and with the recent rains a spread may take place if sulphur sprays are neglected. Two to three pounds of colloidal mixed in with each 100 gallons of lead arsenate spray have proved fairly effective under average condi-

tions. Where growers are in localities in which spot is particularly bad a ½ gallon of lime sulphur to the 100 gallons of spray increases the fungicidal properties; in such a mixture, however, only 2 lbs. of colloidal should be used, and 2 lbs. of freshly hydrated lime should be used to each lb. of arsenate of lead powder. Such a mixture, whilst proving effective, should reduce any chance of injury to a minimum, though it is realised that no guarantee can be given in this respect in any spray where lime sulphur and lead arsenate are mixed.

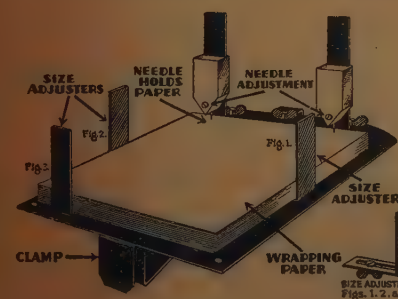
The warm weather appears to have favored the Woolly Aphis parasite, and this wasp has already emerged in large numbers, a fact which should be reflected in a much reduced infestation of Woolly Aphis. Canary Fly is well under control in Southern commercial areas. The Light Brown Apple Moth is making its appearance again in large numbers in the Huonville area, and arsenate of lead sprays must not be neglected this month.

Berry Fruits.

Crop prospects have been considerably reduced by the recent hot weather. The exceptional heat towards the end of the month destroyed from a commercial viewpoint more than half the gooseberries in some areas, and in the lower areas Raspberries growing on the top portion of the canes were adversely affected. Strawberries growing in good soils at heights of from 500 feet upwards escaped fairly well as regards the heat, but ripened very rapidly, and the recent spell of wet weather resulted in some loss through the hold up in picking.

With regard to this latter point, all over ripe or slightly mouldy berries should be removed from the plants after such an occurrence, as if left, a large proportion of the remaining fruit will become affected, more particularly if subsequent rains are frequent. Actually the rains of last week did immense good, but much of this good will be lost if an excessive quantity of mouldy berries are left around. Occasionally it is necessary to pick punnet berries under damp conditions; if such fruit is immediately dried off under cover in an airy shed or such, little damage or deterioration should result. With regard to Black Currants, the dry weather caused a lot of "running off" (that is, the end berries of the trusses failed to develop properly, or dropped), whilst leaf scorch was also noted. Here again recent rains will prove very beneficial and were very welcome.

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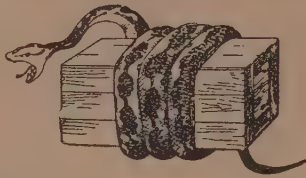
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Dried Fruits News and Notes

Drying Vine Fruits

How the Varieties are Processed

MUCH progress has been made in the methods and practice of the processing and the packing of dried fruits during the last ten years, writes Mr. C. W. Till, in the "S.A. Storekeepers' and Grocers' Journal." A great deal of investigation work, with the object of discovering improvements in the methods of processing and of dipping of Sultanas and Lexias has been done by the Council for Scientific and Industrial Research. An appreciable advance has also taken place in the processing of dried Apricots, resulting in what is known as the moist pack, and it is now proposed to outline the processes by which these various grades are obtained.

Currants.

The Currant grows on a vine which is generally trained on two wires; the vine can be shaped so as to have two arms on the same level or two arms on each wire. They can also be seen with one long arm only.

As sugar is necessary for weight and keeping quality in all dried fruit, all vine fruits are tested for baumé or sugar content. Currants are generally harvested in February and should show a test of 14 deg. baumé. The fruit is picked and immediately spread without any other treatment on the drying rack. A large, full bodied berry is aimed for, together with the natural filmy coat of bloom. This can be retained during drying by careful handling and by shading.

Currants dry in three to four weeks in the Murray districts, but more time is required in the rainfall areas. As Currants are graded for size, together with "body" and "bloom," the highest grade means the largest in size, with the natural bloom well in evidence. Buck Currants are large freaks which contain one or more seeds.

Sultanas.

This seedless Grape requires much care in the various processes of picking, dipping, drying and packing. The boiling dip of the old days is gone.

At present the mixed dip is most widely used. The fruit is picked when showing a test of at least 12 deg. baumé and immersed in a dip mixture made up of 50 gallons of water, 2½ lbs. potash, 1½ lbs. caustic soda, and 1½ pints olive oil, the temperature ranges from 177 deg. to 183 deg. All ingredients are measured or weighed and a thermometer is continually suspended in the mixture.

The aim of all growers is to produce a golden colored article together with size and weight. Damp weather affects color during drying, and variations in color are also caused by faults in temperature or errors in adding water, caustic or potash.

Like Currants, Sultanas are dried on racks shielded from rain and heat waves, as both these extremes affect the color and value.

The fruit will dry from 8 to 10 days in good weather, and is then shaken on to hessian and placed in the sun to finish off. Sunlight fixes or firms the color.

Two other dips are also in use; one is the modified caustic dip, 1½ lbs. of caustic at 190 deg. to 196 deg. This gives a browner type of fruit and can be used on rain or hail damaged Sultanas, the other is called the cold dip, and is popular in Victoria, it is gradually gaining favor also in South Australia.

As its name indicates, this dip is not heated. It is made by adding 1 lb. of potash to every two gallons of water, and the fruit is immersed for three minutes. Olive oil is also emulsified and used in this dip. The drying rate under this process is a little slower, but the fruit stands up to adverse weather better. When dry the fruit is given a "finishing" lukewarm wash.

In the old days Sultanas were dipped at the boiling point 212 deg., caustic soda used and the drying rate was quicker. The finished article, however, was much darker in color, and did not suit the English market.

Sultanas are graded according to color and size, the higher crowns having color, body and absence of dark or damaged berries. The sugar content and food value in the lower grades is present equally as in the higher, but the larger fruit is the better value.

Sultanas can be obtained in large, smalls, or unsized in all grades, and most of the production is in the Murray districts.

Gordo and Waltham Lexias.

Lexia Raisins are mainly dried Grapes from the Muscat Gordo Blanco vine, Walthams come from the White Malaga or Waltham Cross vine. These Raisins are both picked when they show a baumé test of 14 deg.

The dip mixture generally used consists of 50 gallons of water, 2½ lb. of caustic soda with a little olive oil added and the fruit is dipped at 196 deg. to 200 deg.

The extra heat and caustic soda hasten the drying rate, and these Raisins can be dried in 14 days, after which they are also finished off in the heat of the sun.

Lexias are more carefully handled during grading and stemming than was the case some years ago, and previous to packing, Sultanas and Lexias are treated with a light oil mixture that makes them freer running when opened from a 56 lb. box.

Australian Raisins are now fine in color and appearance, and are graded according to size and freedom from damaged fruit.

Packing houses are subjected to inspection for cleanliness, grading and packing, according to standard. It can safely be said that the Australian housewife gets value for her money.

GRUBBING



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More Prosecutions

James Stephen Aylett, of Whittou (Murrumbidgee Irrigation Areas) was proceeded against by the New South Wales Dried Fruits Board at the Cootamundra Court on December 6, 1937, for having sold 227 lbs. of dried Apricots without having first passed same through a Dried Fruits Packing Shed registered under the provisions of the Dried Fruits Act, 1933. Mr. C. A. Vaughan, solicitor, appeared for the accused and pleaded guilty on his behalf.

Mr. Inspector C. N. Hall, of the New South Wales Dried Fruits Board, quoted the Regulations made under the Act to the effect that it was an offence to sell dried fruits unless:—

(a) The dried fruits have been packed in a Registered Packing Shed.

(b) The dried fruits have been packed and graded in accordance with the Regulations made under the Dried Fruits Act.

(c) The packages containing the dried fruits had been branded in accordance with the Regulations made under the Act.

Mr. Hall also informed the Court of Aylett's previous convictions for similar offences.

Mr. Vaughan told the Court that the accused at the present time had no assets, apart from an Apple crop on his farm on the Murrumbidgee Irrigation Areas which would not be ripe for some months. In addition he is a very sick man.

The Police Magistrate, in imposing a fine of £50, with costs 10/- and witnesses' expenses £2/2/-, stated that the only way in which the dried fruits system can be carried out is by a rigid enforcement of the provisions of the Dried Fruits Act.

Son Also Fined.

A similar charge was also preferred against James Leslie Aylett, a son of James Stephen Aylett. Mr. Vaughan, who appeared for this accused, also pleaded guilty on his behalf.

Mr. Inspector Hall outlined the case for the New South Wales Dried Fruits Board, stating that the accused was not a producer. Mr. Vaughan asked for leniency, as it was a first offence, and suggested that a small penalty would meet this case.

James Leslie Aylett was fined £10, with 10/- costs and £2/2/- witnesses' expenses.

MR. F. A. JAMES CEASES PACKING.

Appointed A.D.F.A. Agent.

The Australian Dried Fruits Association have purchased the two garden properties and a large packing shed at Berri from Mr. F. A. James, who has been in the limelight lately in regard to the control assumed by the Dried Fruits Control Board. The price paid to Mr. James is said to be £20,000.

Mr. James has now been appointed a distributing agent for the Association, and will not be engaged in the export of dried fruits in future. It is stated that he will continue to export jams and canned fruits as before.

Heavy Fines Inflicted Appeal Fails

Appeal Fails.

On October 20, 1937, James Cicci and Norman McPhee along with other dried fruits growers on the Murrumbidgee Irrigation Areas were convicted at the Griffith Court of Petty Sessions for selling ungraded dried fruits. Each grower was fined £10, with Court costs 8/-, professional costs £1/1/-, and proportion of witnesses' expenses £6/9/2. Total, £17/18/2.

Mr. R. G. Birt, an Inspector attached to the South Australian Dried Fruits Board, was made available to the New South Wales Dried Fruits Board to investigate these cases. Mr. Birt visited the Murrumbidgee Irrigation Areas and obtained the necessary information for the prosecutions. He was the main witness for the New South Wales Dried Fruits Board at the hearing of the cases.

At the District Court at Griffith on November 30, 1937, Cicci and McPhee appealed against the convictions. Captain Storkey, V.C., appeared on behalf of the New South Wales Dried Fruits Board, and Mr. P. A. Morgan of Dickson and Morgan, solicitors, Griffith, appeared for Cicci and McPhee. It was agreed that the appeal of Cicci be heard first. In dismissing the appeal, His Honor Judge Betts, stated that he was satisfied that the offence had been committed, and awarded the Clerk of Peace £5/5/- costs against Cicci. Mr. Morgan asked His Honor to apply the provisions of Section 556A of the Crimes Act, 1900. Captain Storkey objected to this procedure, and Mr. Inspector Hall, of the New South Wales Dried Fruits Board was called to give evidence which was to the effect that the Board had been most perturbed in regard to the rumours of illicit sales of dried fruits by growers on the Murrumbidgee Irrigation Areas and had arranged at considerable expense for the services of Inspector Birt to be made available by the South Australian Dried Fruits Board. Mr. Hall further stated that Cicci was one of the growers whom Inspector Birt was instructed to call upon. His Honor refused to extend to Cicci and the provisions of Section 556A.

Mr. Morgan then was granted permission to withdraw McPhee's appeal, but the conviction against McPhee was confirmed with £5/5/- costs. The conviction was also confirmed against Cicci.

This action smoothes the way for the orderly marketing of dried fruits, explained Mr. H. D. Howie in a press interview, and the continuance of the voluntary marketing agreement entered into by the large packing interests recently following the Privy Council decision in favor of Mr. James last year. It will be remembered that it was the "James Case," as it became known, which precipitated the Marketing Referendum early in 1937.

Other packing interests are being absorbed by organisations working in conjunction with the A.D.F.A., and so practically all large packers are now covered by the voluntary agreement which observes the conditions which Mr. James fought successfully last year.

OIDIUM OF THE GRAPE VINE.

Symptoms and Control.

IN New South Wales oidium disease is to be seen mostly in the coastal vineyard areas, where the humidity during the growing period is fairly high. In the drier inland areas it is of infrequent appearance, but is well known amongst the growers in the Hunter River areas. Under suitable climatic conditions it spreads rapidly, and in bad seasons, when allowed to go unchecked, it will more or less completely cover the berries and the whole of the bunches of the susceptible varieties. This disease does not require as much heat for its development as does Downy Mildew, nor does it require free moisture. Sultry conditions favor its development; excessive heat will destroy it.

Some varieties are more susceptible than others. Madeira (Verdelho) is very susceptible. Black Shiraz is another susceptible variety, as also are, although to a little less extent, White Shiraz, Ouilade, Alvarelhas, Chasselas, Black Hamburg, Cabernet and Muscats. Pino, Grenache, Mataro, Tounga and Aramon are susceptible only to a very slight extent.

Where the bunches are attacked badly the berries are covered with the disease in the form of a fine dust of a powdery nature, varying from a cream to a greyish color, not unlike dirty-colored flour.

Attacks all Parts of Vine.

All parts of the vine are liable to attack, and a fine greyish film is seen covering these parts. The canes which have been attacked during the Summer, when seen in the Winter, show black markings, which, if closely examined, will appear like black specks. Unlike Black Spot, there are no depressed areas. It can appear early in the season and attack the young bunches, even before the flowers show. If attacked at this stage the young bunches dry up and fall. As is the case with Downy Mildew, Oidium adversely affects wine made from the diseased Grapes.

Dust with Sulphur.

The usual treatment is to dust with sulphur, and, provided the weather is sufficiently warm, good results can be obtained, but under cooler conditions sulphur does not volatilise sufficiently to kill the spores. Colloidal sulphur sprays are being tested to ascertain if they will be of service, particularly during the cooler weather. Fine sulphur is more effective than coarse; in fact, very coarse sulphur cannot be recommended.

Sulphur is usually mixed with some inert material, and many growers favor mixing with slaked lime in the proportion of about 10 to 1. More lime than this can be used, and when, towards the end of the season, the vines are at a stage when they are carrying a large amount of foliage, it may be more economical to use a larger proportion of lime.

The lime prevents balling, and is consequently easier to apply. It also neutralises any free sulphuric acid which the sulphur may contain, and this reduces in some degree the liability to scalding. In some cases gypsum is used with the sulphur.

If the Grapes are sulphured just prior to vintage there is danger of a certain amount of sulphur being carried into the winery on the Grapes.

AUSTRALIAN DRIED FRUITS SALES IN GREAT BRITAIN.

The Commonwealth Dried Fruits Export Control Board advise that for the period ending December 9, 571 tons of Australian dried fruits were placed in Great Britain. Supplies are comparatively restricted owing to the heavy clearances earlier in the year. 356 tons of Sultanias averaged £42/14/-; 178 tons of Currants £28/7/-, and 37 tons of Lexias £68/2/4 per ton.

If the amount is excessive it is liable to cause a disagreeable flavor in the wine.

Guard Against Scalding.

Should the operation of sulphuring be followed by a very hot sun the foliage and fruit may suffer a certain amount of scalding, therefore some growers prefer to sulphur during dull weather, and consequently choose early morning or towards evening for the operation. Others like to see the dew present to assist the sulphur to adhere. In any case, a good fine sulphur will adhere much better than a coarse one.

An application can be made on a very small area by dusting or shaking the sulphur through a hessian bag held in the hand. This method is somewhat wasteful, and in larger areas, where the expense is warranted, sulphur bellows or knapsack distributors are preferable. Horse-drawn machines even may be used in large vineyards. — "N.S.W. Agric. Notes."

DRIED FRUITS BOARD (S.A.).

THE election for two representatives on the Dried Fruits Board for growers in the irrigated areas took place during December.

The Secretary of the Dried Fruits Board (Mr. W. N. Twiss) who was Returning Officer, stated that the poll was a relatively heavy one, representing a shade over 75 per cent. of the ballot papers issued.

There were three candidates for the two seats, namely, Mr. J. B. Murdoch, of Waikerie, and Mr. C. W. Till, of Barmera, who were the sitting members, and Mr. E. N. Seary, of Renmark.

The first count disclosed that Mr. Murdoch secured 582 first preferences; this being an absolute majority, he was elected without resort to the exclusion of either of the other candidates. Of the remaining first preferences, Mr. Seary secured 326 and Mr. Till 156. For the second seat, Mr. Till obtained 485 of Mr. Murdoch's second preferences and Mr. Seary 97, thus securing to Mr. Till election of the second seat. There were seven informal votes.

There was no election for the one representative of the growers in the non-irrigated areas, the nomination of the sitting member, Mr. C. E. Russell, being the only one received. Mr. Russell was accordingly declared elected.

The personnel of the Board, therefore, remains unchanged as the other members, Mr. G. A. W. Pope (Chairman) and Mr. Hugh Crawford (Deputy Chairman) are appointed by the Government and are described in the Dried Fruits Act as permanent members.

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THE MARKET GROWER

OFFICIAL ORGAN OF THE MARKET GARDENERS AND FRUITGROWERS' SOCIETY OF VICTORIA.
ALSO OFFICIAL ORGAN OF THE KOONDROOK & BARHAM TOMATO GROWERS' ASSOCIATION.

20 feet High Tomatoes

Yield 59 Tons to Acre

MR. JOHN DOUGLASS, Special Instructor in Agriculture, N.S.W., stated recently that the latest house for growing Tomatoes intensively in N.S.W. had been erected by Mr. Fred Kay, at Curl Curl last Summer, according to the "Sydney Morning Herald."

In this house, which was 129 feet long, 30 feet wide, and 7 feet walls, and was very elaborately fitted with ventilating arrangements, the crop grown was, in his opinion, one of the most perfect that had ever been grown here.

Virgin soil was used, and this was enriched by heavy applications of dairy manure and a base dressing of bone dust and superphosphate applied at the rate of 10 cwt. to the acre. The plants grew to an enormous height, many of them reaching more than 20 feet in length. They were trained to 7 feet strings, and then ran along the top of the wires, similar to the method used in Grape-vine work. The variety planted was a selection from Planter's Favorite, which had proved to be somewhat naturally resistant to fusarium wilt. The crop was given 14 light side-dressings of fertiliser from the period after the fruit on the bottom bunches had set until the beginning of November.

No disease appeared in the crop until late in the Spring, when Leaf

Mould made its presence felt, and this was responsible for the non-setting of the top bunches.

The yields were phenomenal; starting off with a few pounds in July, the crop provided 1,624 lb. in August, 2,878 lb. in September, 3,800 lb. in October, 2,880 lb. in November, and 456 lb. in December, while 380 lb. of seed Tomatoes and non-pollinated fruit was picked during the whole period. This made a total yield of 12,018 lb., which is at the rate of about 59 tons to the acre.

Mr. Douglass stated that this yield was not considered phenomenal in glass-houses, but was regarded as very high in hot-houses, where the round type Tomato of heavy, high quality was grown. These yields compared favorably with the best American crops, and Mr. Kay was to be congratulated on the very high standard of efficiency shown throughout the growing period. The success of the crop was mainly due to the excellent cultural methods, coupled with the fact that the plants were spaced 3 ft. by 1½ ft. apart, which was considered to be very wide planting in New South Wales. This wide planting enabled the sun to penetrate thoroughly the heavy-leaved plants, making the pollination almost perfect throughout the Winter.

EXPERIMENTS WITH SOYA BEANS.

Queensland Testing for Suitable Varieties.

The annual meeting of the Queensland Acclimatisation Society was held at the society's grounds, Lawnton, in December, when the President (Mr. James Nicol, Robinson) occupied the chair.

The President said that the Society this year was celebrating its 75th year of existence, and drew particular attention to the early experiments carried out with sugar cane, cotton and other economic crops at Bowen Park, and in which prominent citizens associated with the early history of the State played important parts. The first President was Sir George Bowen, after whom the area on which operations were first started, was named.

Soya Bean Experiments.

Supporting the adoption of the annual report, Mr. M. P. Campbell drew attention to the value of the Soya Bean with which the Society is carrying out experiments with a view to finding out the varieties best suited for this State, and stated that the value of the crop in Manchuria was equal to that of all the wool produced for all Australia.

Mr. Bottomley said that when visiting the agricultural centres they would not fail to draw the attention of farmers to the importance of the Soya Bean.

An inspection of the grounds was made, when interest was taken in the various plants, including Pecan Nuts, Custard Apples, Queensland Nuts, Tung Oil trees, Papaws, Avocado Pears, Grapefruit, Sugar Cane, Soya Beans, Olives, Strawberries, Mangoes and Carob Bean.

ONION BOARD'S PROBLEMS.

Heavy Overhead Expenses.

Huge Loss by Decay.

According to figures quoted in the Legislative Council by Mr. Chandler, in reply to questions, the Onion Board has been a costly business for growers. Included in the expenses incurred from March 26, 1936, to December 3, 1937, are seen: Staff salaries (secretary, accountant and manager), £2,001; office expenses, £883; Board members' fees and expenses, £2,749; printing stationery, £1,028; miscellaneous, £355, and interest to bank, £2,397.

It was said that during the 1936-37 season, the Board handled 44,855 tons of Onions, advanced payments amounting to £222,305, sold 23,939 tons of Onions realising £174,718 plus £1,145 owing for sales effected.

Picking over cost £7,895, and approximately 11,000 tons had to be discarded owing to deterioration and natural decay; 10,000 tons remained unsold, of which 2,000 tons were in good condition at the time of the report. No levy was collected during the season under report, and the Board owed £63,322 to the lending authority.

PLANTING OF POTATOES.

Cutting the Seed.

THE manner in which seed Potatoes is prepared is often the cause of poor crops, says "N.S.W. Agricultural Notes." Potatoes held in storage under cover in the Winter, but in the Spring they should be subjected to access of air and light. This allows the healthy development of sprouts, and results in less decay.

RAPID DEHYDRATION FOR VEGETABLE STORAGE POSSIBILITIES.

RAPID dehydration of vegetables is now possible as the result of a recent discovery by the U.S. Department of Agriculture working in co-operation with the Chemical Foundation, says the "Florida Grower."

In the new process the vegetable is first exposed to the vapor of a chemical which causes it to become water-soaked. In this condition the juice is more easily pressed out—for immediate use or for concentration for future use, and the pressed residue dried for storage. Harmless chemicals found to be effective for this purpose are toluene, chloroform, ether, benzol, petrol ether (carbon tetrachloride, sulphur dioxide, and chlorine gases).

During the experiments, conducted by the Bureau of Chemistry and Soils, sliced Sweet Potatoes, Carrots, Rutabagas, Beets, and Green Beans were exposed to the vapor of carbon tetrachloride. All were water-soaked at the end of one hour. The juice was then pressed out and amounted to from 50 to 85 per cent. of the total weight of the raw vegetables.

The pressed residue of vegetables treated according to this process dries rapidly and thoroughly at relatively low temperatures. At room temperature the residue dried to equilibrium within 36 hours. This contrasts with the older and more costly process in which thin slices of untreated vegetables, particularly Sweet Potatoes, after long periods of air-drying still contain fresh tissue on the inside. The juice, concentrated to a syrup, and the pressed residue reduced to the air-dry condition will keep indefinitely for future use or manufacture.

It is believed that this process will provide a satisfactory method for storing fleshy plant materials like Potatoes without loss from rotting, freezing, respiration, moulding, and enzyme action. The process was discovered by Dr. E. F. Hopkins, Chemical Foundation appointee working in the laboratory of the new Sweet Potato starch plant at Laurel, Mississippi, while he and other chemists were searching for a method to prevent physical and chemical changes in the starch content of Sweet Potatoes while they are in storage.

MUSHROOMS A LA TUNNEL.

Bendigo's New Industry.

In England, mushrooms are grown in cellars and command a good price as an out-of-season delicacy. Two men in Bendigo recently conceived the idea of growing mushrooms for Christmas and utilised disused old mining tunnels in which to make mushroom beds. They used nearly a thousand feet of the tunnels.

Mushroom spawn was obtained from Sydney from one of our advertisers (R. Mas), and planted at the beginning of November. The maturity age is about seven or eight weeks, dependent upon conditions. In this case the temperature is even and the moisture, together with the prepared soil beds, is conducive to good growth. Messrs. Burnham and Rogers, the growers, believe that there is a future for their novel industry.



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STARCH FROM POTATOES.

U.S.A. Factory Proposals.

A starch factory to take care of surplus Sweet Potato crops in the Carolinas is planned by the Charleston, S.C., County Development Board.

According to Pierre Mazyck, managing director, a production of 300,000 bushels of Sweet Potatoes annually would be necessary to support the plant Charleston proposes to erect. Mr. Mazyck says that the textile mills of North and South Carolina, which use a large portion of the 3,000,000 pounds of starch imported annually, would be the best customers of the project. The mills use the starch in "sizing" their cotton cloth output.

After inspecting a starch plant at Laurel, Miss., and packing plants in Georgia, where the by-products of such starch making are used, Mr. Mazyck and a company of Carolina experts returned to Charleston recently enthusiastic over the proposed plant on the seaboard to take care of the farmers' Sweet Potatoes production and furnish "sizing" for cotton mills.

There are 19 other products besides starch derived from Sweet Potatoes put through a starch mill, but the one used in Georgia and Mississippi as food for cattle is the by-product that will interest the South Carolina group in connection with their starch factory project at Charleston.

POTATO AREA DOWN.

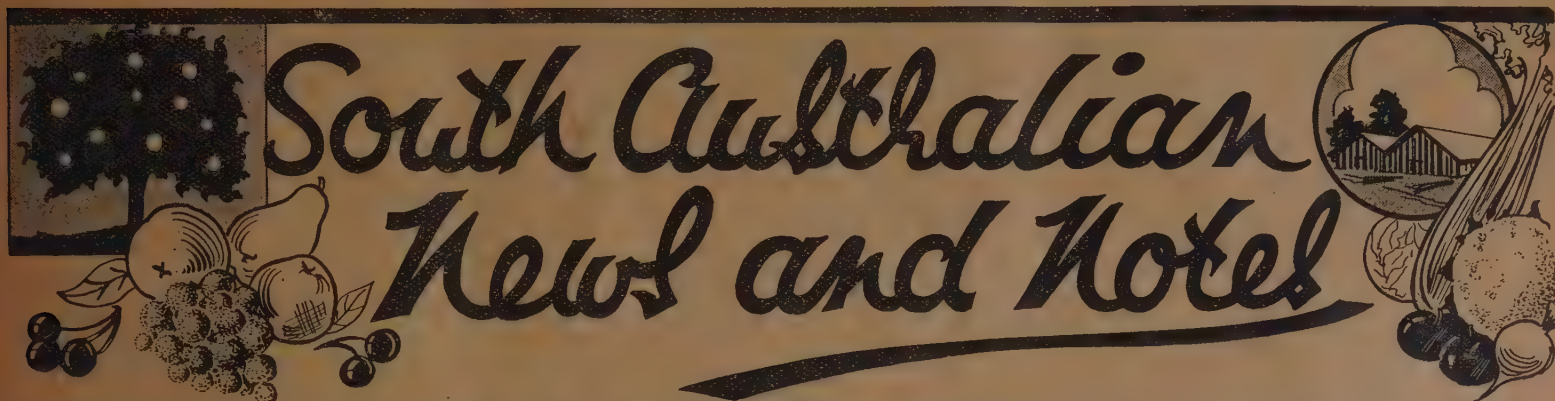
Prices at Low Level.

According to reports filed in the Victorian Department of Commerce, there is a decrease in planting from last year. The area planted in 1936-37 totalled 45,627 acres, and it is estimated that the current season's plantings will amount to 44,400 acres.

Dry conditions in the market gardening districts caused the late crops to ripen off, and yields will be lighter, averaging about 2½ tons an acre. In the Millbrook area the crop is reported to be backward, and in most other districts lack of rain and the hot weather have set the crops back to an average of about 80 per cent. of normal.

Prices for old Potatoes have been at a very low level during the last month, the top price recorded being £2/10/-, while sales were made at as low as £1/10/- a ton Melbourne. Prime new Potatoes are quoted at £4/10/- a ton.

Exports of Potatoes from Victoria during November totalled 548 tons, and 218 tons were imported from Western Australia.



INCLUDING OFFICIAL NOTES AND REPORTS FROM THE SOUTH AUSTRALIAN FRUITGROWERS' & MARKET GARDENERS' ASSOCIATION.

The South Australian Fruitgrowers' & Market Gardeners' Association

Minutes of Executive Meeting Held Friday, December 17, 1937

Present: Mr. W. J. Bishop (President), Messrs. H. B. Robson, F. G. Gill, A. C. Gibson, C. H. Ragless, G. Jennings, G. H. Schultz, R. A. Cramond, H. J. Walker, F. Hughes, A. Elliott, J. Turner, C. W. Giles, H. N. Wicks, N. T. Hobbs, L. J. Wicks, J. B. Randell, A. O. Petersen, J. G. Potts, W. H. Ind, E. L. Giles, F. A. Wicks, T. Playford, and Secretary.

Minutes, with alterations confirmed.

Apologies from Messrs. G. J. Pitt, I. R. Adams, G. Pitt, and G. Strange.

Correspondence: Sugar Concession Committee, re sixth annual report and advising prices for canning and jam manufacture of various fruits; Department of Agriculture, re importation of fruit by air, and re fruit in cold storage; Head Master Clarendon School, re winner of junior Apple packing at Royal Show; Torrens Valley A. and H. Society, asking support for their coming Show on February 12, 1938.

Mr. C. W. Giles moved "that the correspondence as read be received and dealt with." Seconded Mr. Wicks. Carried.

Torrens Valley Show: Mr. W. H. Ind moved, supported by Mr. C. W. Giles "that £1/1/- be donated to the Torrens Valley A. and H. Society." Carried.

Junior Apple Packing, Royal Show: Mr. F. Hughes moved "that Mr. G. Jennings make the presentation to the winner on behalf of the Association." Seconded Mr. C. W. Giles. Carried.

Importation of Fruit by Air: Mr. W. H. Ind moved, supported by Mr. Ragless "that the authorities be advised of the danger of passengers carrying fruit by plane, boat, motor and rail." Carried.

Sale of Cases and Containers with Fruit: Minutes of the general meeting held in the New Market Board Room on December 3rd, and Secretary reported that conference with the merchants had not yet been arranged, but the merchants had intimated they would be pleased to meet our Committee during the second week in January.

Mr. W. H. Ind moved "that this matter be dealt with, and steps be taken to bring the resolution into force with the first market in January." Seconded Mr. C. W. Giles.

Amendment: Mr. R. Cramond moved "that the matter be left in the hands of the Committee." Seconded by Mr. F. Hughes. The amendment won, and was carried.

Mr. J. Turner moved "that it be a recommendation to the Committee to intimate to the merchants that we intend to enforce the resolution in the New Year, and ask for a conference during the coming week." Seconded Mr. F. Hughes and carried.

Society Report: A report from the manager of the Society was read by

the President, and adopted on the motion of Messrs. C. W. Giles and J. Turner.

Reports From Sections.

Cherry: Mr. R. A. Cramond, who had just returned from a business trip to Melbourne reported on the Cherry trade in that capital. The weather during the early part of the season resulted in good quality being exported, and this was giving the S.A. Cherries a good name. Bad weather since, however, had had a detrimental effect on the fruit, bad keeping qualities had broken the confidence of the buyers. He was pleased to report that this week's consignment had opened in splendid condition, and buyers were now showing a preference for S.A. Cherries. The good black Cherry would have no opposition on the Melbourne market.

Mr. T. Playford supported by Mr. G. Jennings, moved a vote of thanks to Mr. Cramond for his information which was always so willingly given.

Soft Fruits Section: Mr. F. Hughes reported on the article appearing in the "Advertiser" of December 9, stating that the Sugar Bounty was likely to be curtailed. He suggested that Mr. Stacey, the Federal Member be communicated with, together with all S.A. Federal Members, pointing out that if this happened we would be at the mercy of the factories and receive no price at all. He also brought forward the matter of country carriers being likely to be de-licensed from carrying skins. A commission was investigating this matter at present, and if carriers were debarred from taking back loadings such as skins, it would result in quite a number of them having to go off the road, which state of affairs would have a detrimental effect on the industry. Mr. A. Elliott supported Mr. Hughes, and stated that the Soft Fruit Section was exploiting every avenue to try and avert the inevitable glut during the first week of January.

Sugar Bounty: Mr. F. Hughes moved that "All the Federal Members for S.A. be written pointing out the vital necessity of the continuance of the Sugar Bounty to the industry in South Australia." Seconded Mr. J. Turner. Carried.

Mr. H. N. Wicks moved "that Mr. T. Playford, M.P., bring the matter of transport before the Commission on our behalf." Seconded Mr. A. Elliott and carried.

Resolved that Messrs. W. J. Bishop, L. J. Wicks, N. T. Hobbs, form Committee to assist Mr. Playford.

Tomato Section: Mr. F. Gill reported that the Melbourne market had closed, and export this year was 50,000 down on last year. Prices were not nearly as good as last year. The season was practically finished, and unless steps were taken to stop the

Message from the President

ANOTHER YEAR HAS PASSED, AND WE REVIEW IT WITH MIXED FEELINGS, FOR DESPITE MANY CHANGES AND VARYING FORTUNES, IT HAS PROVED A SUCCESSFUL ONE TO MOST SECTIONS OF THE INDUSTRY.

THE ASSOCIATION HAS DONE MUCH, FOR THE INDUSTRY, AND IS APPRECIATIVE OF THE LOYALTY DISPLAYED BY ITS MEMBERS. WITH THE CONTINUANCE OF THAT LOYALTY AND CO-OPERATION, THE ASSOCIATION CAN RISE TO EVEN GREATER ACCOMPLISHMENTS DURING THE YEAR 1938, THROUGH THE DOOR OF WHICH WE HAVE JUST ENTERED.

MAY I EXPRESS IN CONCLUSION THAT 1938 WILL HOLD GREAT HAPPINESS FOR MEMBERS AND THEIR FAMILIES, AND MAY SUCCESS ATTEND ALL THEIR ACTIVITIES.

I SINCERELY HOPE THAT THE ASSOCIATION AND THE INDUSTRY GENERALLY WILL EXPERIENCE ONE OF THE MOST SUCCESSFUL YEARS OF THEIR EXISTENCE.

W. J. BISHOP, President.

S.A. FRUITGROWERS' AND MARKET GARDENERS' ASSOCIATION.

MARION BRANCH.

A special general meeting of the above branch will be held at 8 p.m. on Wednesday, January 12, 1938.

All members are particularly requested to attend.

A. C. GIBSON, Secretary.

erection of further glass houses the Tomato industry in the future would be ruined.

Citrus: Mr. N. T. Hobbs reported that the season was being wound up.

Celery: Mr. G. Strange reported that nominations were being called for the vacancies on the Committee.

Christmas Holidays: Mr. T. Playford moved "that the Secretary be granted leave during the week following Christmas provided his services were not required during that week." Seconded Mr. G. H. Schultz. Carried.

Finance: Secretary submitted financial statement, and presented accounts for payment.

Mr. W. H. Ind and Mr. G. Schultz moved the adoption of the statement, and the passing of accounts for payment. Carried.

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The President (Mr. W. J. Bishop) extended to all members his best wishes for a Merry Christmas, and a Successful New Year.

Extracts from Circular Received from Sugar Concession Committee.

Minimum Prices Fixed for Canning and Jam Manufacture, 1937-1938.

Fruit for Canning:

Variety.	Minimum price per ton.
Apricots	£12
Clingstone Peaches—	
Clear centre Clingstone	£11
Clingstone Peaches—other . . .	£10
Freestone Peaches	£7
Pears—	
Bartlett's	£10
Keiffers	£8
Quinces	£7
Pineapples—	

4in. or more in diameter, tops off £9/6/8
Small, tops on (or the equivalent per ton), 3/- per case

Delivery: Prices are on the basis of delivery at grower's railway siding or grower's district cannery. Metropolitan processors, or those purchasing fruit from other than their own districts, are required to pay freight from the grower's railway siding.

Fruit rejected as unfit for canning, but which is used for jam, pulp or other manufacturing purposes, is required to be paid for at the rates prescribed for jam fruits.

Processors are required to accept delivery of fruit (subject to their usual right of rejecting unsuitable fruit) as and when placed in cool-store at their request, and to state clearly in their contracts with growers the basis for reimbursing growers their costs of storing and insuring the fruit.

Fruits for Jam Manufacture (other than berry fruits):

Variety.	At Metropolitan Factory.	At Country Factory.
Apricots	£10	£9
Peaches	£7	£6
Plums	£7	£6
Quinces	£7	£6

The S.A. Fruit Marketing Association Inc.

Executive Committee Meeting

The monthly meeting of members was held at the Secretary's Office, Brookman Buildings, Grenfell-street, Adelaide, on Friday, December 17, 1937, at 2.30 p.m. There were present Messrs. J. S. Hammat, T. Playford, A. G. Strickland, A. R. Willsmore, H. Scott, G. Quinn, H. N. Wicks, R. O. Knappstein, C. L. Wanser, P. R. B. Searcy, H. M. Charlick, R. G. Hannaford, M. G. Basey, A. O. Petersen, H. J. Bishop, S. M. James, and the Secretary. The President, Mr. H. J. Bishop occupied the chair.

Minutes of monthly meeting held November 12, 1937, were taken as read, approved and signed by the chairman as a correct record. Minutes of ninth annual general meeting of members held November 12, 1937, were read by the Secretary for information and approved. The financial statement was submitted by the Secretary and received. Accounts passed for payment, £55/15/8.

Correspondence: Letters from Government Produce Dept., dated December 3, enclosing letters from the N.S.W. Dairy Products Board asking for a representative of the S.A. Fresh Fruit Industry to attend a conference of Empire producers to be held in Sydney in March next, during the 150th Celebrations. After discussion it was resolved: "That this Association send a delegate to attend the Empire Producers' Conference in Sydney, in March next, at the expense

of the Association." The Secretary to write and ascertain what form the conference will take and what the period will be, and obtain a preliminary agenda if possible. On receipt of this information the citrus growers to be communicated with to see if they wish to be represented.

Letters from the Australian Apple and Pear Export Council included the following matters: Copy of minutes of Sydney conference; advising the Executive Committee recommended the deletion of the word "export" from the title of the Council. Secretary to advise that this Association approved of the alteration. Statement prepared by the President, Mr. J. B. Mills, dealing with important aspects of the marketing of Pears and Apples in Australia. Acknowledging receipts for £62/11/10 to be reimbursed from the Advertising Fund, and asking for the balance of the receipts for the expenditure in connection with the Advertising Fund as soon as payment has been made. Re Granny Smith Apple Memorial, etc. The annual report of the Chief Horticulturist and Chief Inspector of Fruit. Copies of this report can be obtained from the Department of Agriculture.

Apple and Pear Export Council Annual Conference: Messrs. H. J. Bishop and J. B. Randell, the delegates to the annual conference, reported on matters that had been dealt with. Mr.

Bishop explained what had been done in reference to the quota up to date, and the telegrams that had been sent to the President of the Apple and Pear Council were read to the meeting. A very serious position had arisen in regard to the quota, and the shippers were making every possible effort to overcome the difficulties.

Several growers supported the requests that had been made through the shipping committee for additional space, and the meeting endorsed what had been done in regard to obtaining increased quota space. It was agreed that a lettergram be sent to Mr. J. B. Mills conveying the following resolution, which was carried unanimously: "That at the general monthly meeting of growers and shippers held to-day, we re-affirm the necessity of the S.A. quota being the minimum of 420,000 cases."

Continental Fruit: Mr. H. J. Bishop stated that he had an order for 10,000 cases of Apples for Copenhagen, but at the present moment was unable to get a license to ship. Mr. T. Playford, M.P., had taken up the matter with the Prime Minister and with Mr. Cameron, M.H.R., and was doing everything possible to enable the sale to be finalised.

The Secretary reported that Mr. C. J. Young had again won the trophy presented by the Association for the Junior Apple Packing Competition at the last Agricultural Society Show.

Research Sub-Committee: Mr. H. N. Wicks reported that at the meeting of the Research Sub-committee members present expressed the opinion that it was definitely advisable for this sub-committee to continue (possibly under another name), and it was agreed to put the matter on the next agenda for further consideration.

The chairman wished members the Compliments of the Season.

Meeting of Research Sub-Committee.

Report of monthly meeting of members held at the Secretary's office, Brookman Buildings, Grenfell-street, Adelaide, on Friday, December 17, 1937. Attended by Messrs. J. S. Hammat, T. Playford, M. G. Basey, H. N. Wicks, R. O. Knappstein, C. L. Win-

ser, R. G. Hannaford, A. G. Strickland, A. O. Petersen, and the Secretary. Mr. H. N. Wicks occupied the chair.

Minutes of monthly meeting held October 1, were taken as read, approved and signed by the chairman as a correct record.

The matter of the sale of cases with fruit was held in abeyance pending further information.

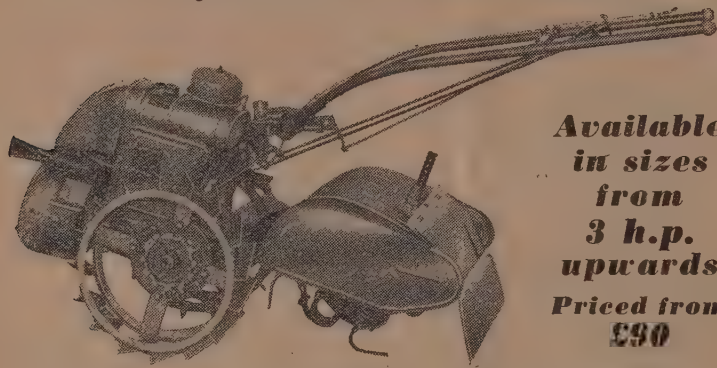
Research Sub-committee meetings: Mr. J. S. Hammat spoke strongly against the suggestion to discontinue Research Sub-Committee meetings. He considered that they served a very valuable purpose in bringing the grower representatives together and enabling them to exchange ideas, and while the orchard experimental work was probably no longer necessary, there were many matters that the Research Sub-committee meeting could effectively deal with.

Mr. Basey and Mr. Knappstein also supported the continuance of these meetings. Possibly it might be desirable to alter the name. Mr. J. B. Randell also agreed with the previous speakers. Particularly in view of the quota system which was in operation at the present time and which seemed to be essential for the continuance of the industry on a payable basis. There was also the problem of local marketing, and the Committee formed by the Australian Apple and Pear Export Council necessitates a Committee in each State to deal with the State problems, and these also might prove very difficult in the future.

Another matter of great difficulty at the present time was the allocation of the available freight under the quota system. Mr. Playford read extracts from a report received by the Premier from the Agent-General in London, and mentioned several matters which would probably need the close attention and organisation of the growers in the near future.

It was agreed that the Sub-committee recommend to the general executive that the meetings should be continued, but that if thought desirable the name of the Sub-committee should be changed.

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Mid-Murray Notes

Black Spot and Oidium — Field Day at Berri — Cincturing Trials — Sheltering Citrus from Wind — Checking Red Scale — Pruning Sultanias, Currants and Gordes — Experimental Work Discussed — Factors Influencing Plant Growth, etc.

(By Our Correspondent.)

DURING the latter part of November we had a break of the kind of weather the fruit grower does not like to see. For eight days intermittent rain fell, and this was accompanied by extremely humid conditions, which gave rise to the development of Black Spot and Oidium. In places where an irrigation had just been applied, in spite of previous sulphur applications, Oidium developed in the densely foliated vines. This was subsequently checked by further sulphur dusting. In many cases colloidal sulphur was used with Bordeaux spray in place of the dusting sulphur, but comparisons between these two forms have not yet been made to check up the relative efficiency.

Dusting sulphur has an advantage because it can be applied with a gun, while the land is still too boggy for a spraying outfit to be drawn along between vine rows. As it only requires a minute amount of sulphur to effectively control Oidium, dusting sulphur "filled the bill." Black Spot is more difficult to control once it makes its appearance, especially when it appears on the fruit, and few growers took the precaution to apply Bordeaux sprays early in the season. Although individual growers have sustained some loss through Black Spot, there is no serious loss spread over the whole area.

Field Day at Berri.

A Field Day at the Berri Experimental Station was held on December 9, and over 100 growers from the surrounding irrigation settlements attended. In the unavoidable absence of the Minister of Agriculture (Hon. P. H. Blesing), the opening ceremony was performed by Mr. N. Wicks (Chairman of the Advisory Board of Agriculture), who said that he had more than a passing interest in both the experimental orchards of Berri and Blackwood, as he had helped to propagate the trees with which they were planted. "Experiments," continued Mr. Wicks, "were becoming very involved in recent years, which necessitated the work of experts, and it is only by the work in the experimental stations that the practical grower can hope to benefit." In speaking of experiments generally, Mr. Wicks paid a high tribute to the work done at the Blackwood Experimental Orchard in introducing the parasite which has cleaned up woolly aphis, a work which has not been generally appreciated nor sufficiently recognised. Before the afternoon's inspection started, the new manager of the Orchard, Mr. Halliday, was formally introduced by the Chairman of the Berri Branch of the Agricultural Bureau, Mr. P. Ingerson. Mr. Halli-

day took the visitors through the cincturing trials on Washington Navel Oranges, and after an inspection of the trees and the beneficial results obtained by cincturing over non cincturing, it appears to the writer that, provided that citrus trees are adequately manured, cincturing is a decided benefit. Cincturing has been done by girdling the tree with a single knife cut, the best results being obtained when the blossom petals have about one-quarter to one-third fallen.

The "salt patch" was next visited. This is a portion of the orchard near the Smyrna Figs, and has constituted a problem ever since the orchard was planted. In its virgin state this soil was highly charged with mineral salts and has so far defied reclamation by drainage. A fresh lot of drains has been laid down in the Smyrna Figs, where a high water table exists, and the pipes have been laid at a common depth of 5 ft. In the "salt patch," an object lesson was seen in the form of a grass named *Paspalum Vaganatum* growing in soil actually showing black alkali. Mr. F. Arndt (Horticultural Instructor) obtained the plants about eighteen months ago and selected the worst spot for a test with this grass, which is growing vigorously and has spread rapidly. It is sometimes known as Salt Water Couch Grass, and should prove invaluable for making use of land upon which no other useful grass will grow. Stock will eat it readily, but as it belongs to a variety likely to become a pest if allowed to spread unchecked, it should be watched.

After passing through the Smyrna Fig area, visitors were shown an experiment on the effect of

Sheltering Citrus From Wind Influence

by the erection of a hessian barrier 12 ft. high and extending so as to afford a protection against the prevailing winds. It is believed that much of the rind blemish of citrus is due to damage by wind, and to a great extent this is correct, as the sheltered trees produced 99 per cent. of marketable fruit, whereas the unsheltered trees fell to 89 per cent.

There is another factor which has shown up this year in that the sheltered trees have set comparatively badly compared with the unsheltered trees. An artificial shelter evidently acts differently from that obtained by a windbreak of planted trees.

At the citrus manure trials

growers collected to hear Mr. F. Arndt explain the progress of these experiments and at the same time hear a word of advice regarding spraying and fumigating for the purpose of

checking the spread of Red Scale. Mr. Arndt said that he and Mr. Grasby had just completed a survey of the citrus orchards in the district, and found this pest has made its appearance and is spreading over a wide area, and advised growers the best means of attacking the problem. He was glad that the Renmark Citrus Association had decided to follow Berri's example in purchasing their own fumigating plant. In the course of the address the writer gathered that the best results obtained at Mypolonga had been with white oil spray followed by fumigation, in which a 100 per cent. kill had been obtained.

Following a visit to the citrus stock trials, showing the influence of root stock on growth influence and cropping habits, visitors were shown the different systems of

Pruning Sultanias, Currants and Gordes.

The soil in this part of the orchard is a light type of red sandy soil, easy to work, and of a good type. Taken over a twenty year record, the highest return comes from the Currants trellised on a single cordon system, with a T head and pruned on the rod and spur system. Rods are left about 18 inches long, and tied to the side wires. Crop returns over the past 20 years on these vines show an annual average of 5,096 lbs. per acre, dried weight. The quality of this fruit is, however, not as good as on the spur pruned vines. The second best return comes from vines pruned as espaliers, with a pair of main arms, while the double parallel cordon system came third place. The two latter returns being 4,547 and 4,425 lbs. average dried weight per acre over the last 20 years. These vines receive applications of five cwt. of 2:2:1 mixed fertiliser (2 cwt. sulphate of ammonia, 2 cwt. of superphosphate, and 1 cwt. potash) per acre, besides a yearly cover crop of Beans or Peas. The average drying ratio from these vines averaged 2.70 lbs. of fresh fruit for every lb. of dried fruit, which must be considered extremely satisfactory.

In another part of the orchard visitors were shown trials in the cincturing of Sultanias, and manurial trials on different varieties of Grapes. These trials, however, have shown so many contradictions that they cannot be considered in any way conclusive. Because of their inconclusive nature, Mr. A. G. Strickland (Chief Horticulturist) has decided to reorganise the manurial trials at the orchard. In fact, many of the orchard experiments have now outgrown their usefulness, and will be reconstructed on a method of replication from which system a more exact result can be obtained.

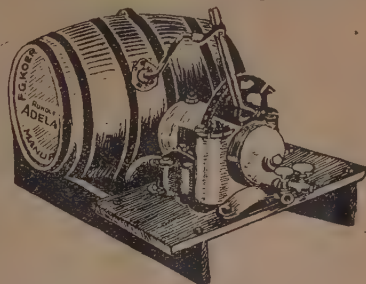
The visitors were entertained at tea by courtesy of the orchard staff, after which Mr. A. G. Strickland addressed his audience on "Recent Experimental Work." With close co-operation between the Department of Agriculture and growers in various districts, many experiments have been carried out on the blocks of individual fruit growers, which have ultimately been adopted as common field practice. With regard to the incidence of blue and green mould in citrus, the speaker thought that experimental work was ahead of the methods of harvesting citrus fruits generally, and if the Departmental recommendations were carried out it would have a beneficial reaction on the keeping quality of this fruit. The storage life of Oranges varies according to the time of year the fruit is harvested. Experiments have shown that the normal storage life of citrus picked in May is about 14 weeks, and if picked in June it is about 10 weeks, and if picked in July it is about 8 weeks.

After this date the storage life is shortened, and it would appear dan-

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gerous to send to the United Kingdom market any fruit picked after the end of July.

Artificial sweating prior to packing has been given a trial and holds out possibilities where temperature and humidity can be regulated, but this is still in the experimental stage, and artificial sweating is being tested by experienced men keeping a careful check on both temperature and humidity. Mr. Strickland mentioned the experiments carried out on Mr. Jungfer's property with sprayings of zinc oxide to supply a zinc deficiency. The writer paid a visit to this property and the results obtained with zinc sprays to cure Mottle Leaf has been nothing short of miraculous. The trees are only young, but the sprayed trees are bursting with vigor with foliage of a dark green, and young growth coming away with the mere joy of life, whereas the unsprayed trees look decidedly sick. Leaves are mottled and small and little new growth is being made by the unsprayed trees. Last year's crop from these young trees resulted in an average of 66 lbs. of fruit from sprayed trees and 46 lbs. from unsprayed trees. But the outstanding result lies in the fact that the sprayed trees had only 1½ per cent. of rejects, whereas the unsprayed trees had 25 per cent., which brings the result down to about 64 lbs. of marketable fruit from the sprayed trees and about 35 lbs. of marketable fruit from the unsprayed trees. These figures are significant and in the course of years the discrepancy would be even more marked if trees were left unsprayed.

On Mr. Plush's property, nitrate experiments are being made in which the nitrates are kept constant in the soil. Sprays are also applied on this property to control insects which are responsible for rind blemishes. Experiments are also being made on the same property with potash and phosphoric acid applications.

"The necessity of nitrogen on citrus is now well established," said Mr. Strickland, "but the use of potash and phosphoric acid is little understood, as there is a marked lack of information regarding these two plant foods, and it is believed that by making comprehensive trials many of the present problems will be cleared up."

Reconstruction of old debilitated Currant vineyards was also an experimental work carried out by the Department of Agriculture, working in co-operation with the C.S.I.R. research officers of Merbein, Vic., upon which Mr. Strickland elaborated, and was

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then subjected to a fire of questions from interested members of his audience. Questions covered a wide field, and the immense benefit derived from a Field Day, followed by an address by the Chief Horticulturist, was appreciated by all present.

When a company of growers foregather, an added benefit lies in the interchange of ideas and opinions, while walking around on a tour of inspection, and so a great day closed.

At a meeting of the Renmark North and Chaffey Agricultural Bureau held recently, Dr. W. Erich Meier gave an address on "Factors Influencing Plant Growth on a Block," and in dealing with fundamentals, mentioned that the plant has two sources of food, one from the atmosphere and the other from the soil. The bulk of the soil is built up from the carbon dioxide of the atmosphere, which appears to combine with water to eventually form starch, cellulose and sugar. This absorption of carbon dioxide takes place only in the presence of light, through small openings usually found on the underside of the leaves.

Although the assimilation of carbon is usually considered independently of the lower plant processes, it is largely dependent on the absorption through the roots of water and minerals (manures).

These minerals supplied to the plant either directly from the soil or indirectly as manures, although they constitute only approximately 5 per cent. of the dry weight of the plants, are of relatively greater importance to its growth. In dealing with plant foods, Dr. Meier went on to say that "It is well to recall that the minerals are only absorbed in solution and in very small amounts, but even if these small amounts are lacking, growth will be affected. By supplying the plant with the correct amount of soil nutrients a minimum of water will be taken up and a maximum efficiency in

the absorption of carbon dioxide will be reached. . . . It is through the minute root hairs that the soil nutrients are taken up, and they are formed only on the new young rootlets. Any process therefore, that encourages the formation of such rootlets will increase the uptake of minerals. The most common practice which does this is delving for Sultanas. By cutting the roots back, opening the soil up deeply, and manuring down the delved furrow new, as well as deeper root growth, is encouraged. Whether delving has a similar effect on less vigorous vines like Currants remains to be seen." Dr. Meier gave a lucid account of the nitrogen assimilation by legumes which in turn become incorporated in the soil when ploughed under.

In dealing with the lesser soil nutrients, the speaker said that research workers in all parts of the world were doing a good deal of work in recent years on what is called minor soil deficiencies, and it did not matter if a soil was supplied with the main plant foods in the event of there being a lack of boron, zinc, iron, copper, and even arsenic plants will suffer. Outstanding cases of which might be cited in zinc application for our citrus trees suffering from Mottle Leaf, indicating a zinc deficiency in the soil. Manganese deficiency in various parts of the State where Oats are grown. Copper deficiency in the reclaimed soils of the Zuyder Zee in Holland, and Boron deficiency on some of our Australian soils. Dr. Meier emphasised the function of carbon manufacture in the following words:—"Carbon dioxide is present in the atmosphere in relatively small proportions 3 to 4 parts per 10,000. It is returned to the atmosphere by the breathing of plants and animals, which in effect is simply a burning up of substances containing carbon in order to supply energy. It is also produced when any organic matter undergoes decay in the pre-

Pome Fruit Crop in N.S.W.

Brief Report of Conditions in December

(From the N.S.W. Department of Agriculture.)

IN 1936 N.S.W. produced 977,901 bushels Apples and 396,227 bushels Pears from 1,048,555 bearing Apple trees and 281,534 bearing Pear trees. The forecast for 1937-8 is a crop estimated at 1,140,000 bush. Apples and 450,000 bush. Pears. The varieties likely to produce these quantities are:—

Apples.	
	Bushels
Granny Smith	450,000
Jonathan	183,000
Rome Beauty	97,000
Delicious	91,000
London Pippin	58,000
Tasma	51,000
Other Varieties	210,000
Total	1,140,000

Pears.	
	Bushels.
Williams B.C.	193,000
Packham's Triumph	136,000
Other Varieties	121,000
Total	450,000

sence of air, and experiments have shown that liberal dressings of farmyard manure are in part due to the production of carbon dioxide. . . . The relative value of horse and cattle manure and Lupin as a cover crop was given by Dr. Meier as follows:—

	Water.	Organic Matter.	Nitrogen.	Phos. Acid.	Potash.
Cattle	70.8	18.2	0.4	0.2	0.45
Horse	72.0	25.28	0.55	0.25	0.6
Lupin	80.0	18.0	.45	.10	.35

Sheep manure is richer and pig manure poorer than either of the above. After dealing exhaustively with drainage matters and cultivation and the effect of shading soil by means of a Summer mulch, Dr. Meier concluded with the remarks that "Shading the soil was a matter which had been entirely overlooked in Australia. In a country of high temperatures—temperatures capable of entirely suspending bacterial activity and nitrate formation, the matter of soil shade should receive more consideration than it has received in the past.—"Nemo."

Profuse blossoming was apparent in many districts this season, and good settings resulted, but shedding was more marked than usual in a number of localities, and crops were thinned out very considerably. In addition, hail and frost damage appears to have taken fairly heavy toll, particularly in the Bathurst area.

Reports indicate that for the most part **Granny Smith** should yield satisfactorily, but **Jons.** appear to be below normal in some of the main producing centres. Prospects at **Batlow** are favorable for most commercial varieties. **Del.**, although somewhat patchy, should mature fruit of good size and quality. Around **Orange** the yield outlook is said to be below normal, while in the **Bathurst** sector the showing is only moderate to light on the average. Crops vary a good deal in the **Goulburn** section. In some localities the settings appear satisfactory, but in a number the position is not so favorable.

Granny Smiths are carrying almost a full crop in orchards on the **Northern Tableland**, but **Jonathans** are much lighter.

Williams and **Packham's Pears** generally promise to yield reasonably well, although on the **Northern Tableland** the setting is only light to moderate. Other varieties of Pears, e.g., **Winter Cole**, **Winter Nelis**, **Bosc**, **Josephine**, **Howell**, **Keiffer**, etc., show varying prospects ranging from light to good in different growing areas.

It should be noted that some months must elapse before the current season's Apple and Pear crops of this State are completely harvested. In the interval conditions can occur which would reduce yields such as winds, hail or other adverse weather conditions, but, as the position presented itself on December 8, 1937, the yields of Apples and Pears are forecast as stated above. The forecast relates to all Apples and Pears, irrespective of whether they be marketed or not.

Some of the district reports of Pear prospects are as follows:—

A medium crop of Pears is in sight and good settings occurred in the **Bathurst Area**, but, owing to hail damage, the percentage of marketable fruit remaining is said to be very limited. **Williams** are showing satisfactorily and other varieties moderately well. **Packham's Triumph** have good prospects, but other kinds are only fair. Moderate to good crops of **Williams** and **Packhams** are to be seen and **Winter Cole** and **Nelis** are satisfactory, but **Beurre Bosc** are only fair.

Winter Coles are only light and others moderate. Crops generally are good at **Parkesbourne**, **Packhams** being above average. Good to heavy settings are to be seen in the **Penrose** locality, especially of **Winter Coles**. **Williams**, **Packhams**, **Beurre Bosc** and **Howells** are carrying satisfactory crops at **Mittagong**, but other varieties are only medium to light. Some shedding is taking place, but mostly development is satisfactory and the fruit is clean.

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Shepparton Cannery

Record Pack of 18,000,000 Cans.
Twenty Years of Progress.

SHEPPARTON — capital of the Goulburn Valley—and famous for its canned fruits, will celebrate its Centenary during 1938. One of the outstanding points of interest to the visitor during the celebrations which commence on January 1, and continue during the year, will be the Shepparton Fruit Preserving Company's huge fruit cannery, which from a tiny beginning in 1918 has grown with outstanding rapidity until to-day it stands supreme as the largest fruit preserving organisation in the British Empire. The dream of 20 years ago, is to-day a reality — a strikingly successful achievement which provides one of the glorious pages in the romantic history of industrial development in Australia.

Behind the commencement of the Shepparton Fruit Preserving Co. Ltd., which henceforth will be referred to by its world-famed trade name "SPC," is a story of courageous endeavor amidst depressing difficulties which at times threatened the fruit-growers with disaster. These pioneers were men of grit and with a tenacity of purpose they hung on to their precarious holdings, and to-day the whole district owes a debt of gratitude to their courage and foresight.

Success in Sight.

Success, however, was not achieved without many setbacks. Lack of money had to be overcome, and after repeated deputations and conferences with the State Government, which was involved heavily in its Closer Settlement Scheme, it was decided that the State should come to the aid of the settlers. Loans and bank guarantees were provided, and in 1918, a factory 250 feet in length "but of beauty utterly devoid," as one newspaper writer described it, was ready for occupation, and the first year's production of canned fruit, totalling 432,000 cans, was successfully dealt with. Although small profits were made in the first few years, serious difficulties soon arose, and the financial outlook of the cannery became very unhealthy, and towards the end of 1923, the books of the company disclosed accumulated losses totalling over £60,000.

The life of the company was in jeopardy, but willing workers, stout hearts, and clear thinking weathered the storm, and by 1925 all losses had been wiped out and the financial position rectified. The whole outlook was changed and a spirit of optimism permeated the district. The lessons learnt were heeded and, with careful far-thinking management, the progress during the next four years was sound and steady. The products of the company were earning well-merited prestige, profits were good, growers were receiving remunerative prices for their produce, and shareholders were in receipt of dividends on their invested capital. The following statistics clearly indicate the development at this stage:—

	Production in tins.	Tons fruit.	Fruit value.	Paid up capital.	Wages and salaries.	Capital (Mach., plant, and building).
First year, 1918	432,000	350	£3,387	£678	£2,322	£16,879
Total to season 1929 . . .	54,898,690	48,906	£530,476	£31,326	£403,949	£193,683

Government Assistance Terminated.
The year 1929 was a particularly happy one for all concerned, for the assistance of the State Government by means of loans and bank guarantees was terminated by mutual consent. All liabilities to the State with interest in full were paid off, and henceforth the company stood firmly on its own feet. The financial position had been consolidated and with a spirit of independence and new-born enthusiasm the management planned for rapid progress in the years ahead. That their confidence was not misplaced was convincingly demonstrated in subsequent years. Each succeeding balance sheet disclosed increasing financial stability. Reserves were rapidly built up, shareholders received annual dividends up to 15 per cent., growers received bonus payments on fruit deliveries and two issues of bonus shares were distributed to shareholders.

Extension Necessary.

Extensive additions and alterations to buildings, machinery and plant were carried out and factory production kept pace with the increasing demand for SPC quality fruits. Taken in conjunction with the statistical information set out above, the following figures clearly demonstrate the recent rapid progress of this successful company.

The past season has been perhaps the most successful in the history of the company. In every direction all

previous records have been smashed. The production reached the huge total of 18,000,000 cans, and the sales for the year amounted to over £640,000.

400 Families Employed in Fruit-Growing.

Where 24 families formerly earned a livelihood in farming, dairying and grazing, upwards of 400 families now are prosperously engaged in

	Production in tins.	Tons fruit.	Fruit, value.	Issued capital.	Wages and salaries.	Capital invested in Buildings & Machinery.
Total to season 1933 . . .	88,791,229	79,754	£845,287	£78,664	£597,538	£233,608
Total to season 1937 . . .	184,938,849	115,894	£1,251,830	£131,022	£811,370	£331,596

fruit growing. The prosperity of the fruit industry has had wide repercussion and this is strikingly shown in the remarkable progress of the Borough of Shepparton. From an ordinary country township of ten years ago, Shepparton is to-day a thriving evergrowing provincial municipality proud of its modern buildings, its city-like business activities, its industrial development, its broad tree lined streets, and its position as capital of the Goulburn Valley.

Twenty years ago "SPC" was an unknown name, but to-day SPC pro-

ducts have an international reputation that is bringing fame to Shepparton. At the Imperial Fruit Show held at Birmingham, in October, 1937, SPC fruits gained the majority of the prize awards, a result as pleasing to its clients as to its management. During the canning season, approximately from Christmas to Easter, when the orchards are laden with a golden harvest, the scene at the factory is one of intense activity.

It is a sight well worth seeing, and every year thousands of visitors from all parts of the Commonwealth and overseas as well, make a point of visiting Shepparton, to inspect the SPC Fruit Cannery, which is to-day recognised as a model organisation which has been developed to a high standard of industrial efficiency.

PASSED IN.

A grower stood at Pearly Gate,
His face was worn and old;
He meekly asked the Man of Fate
Admission to the Fold.
"What have you done?" Saint Peter asked,
"To seek an entrance here."
"Grown fruit, on earth: that was my task.
For many and many a year."
And then the gate did open sharp
As Peter touched the bell:
"Come in," he said, "and take a harp,
You've had enough of Hell!"

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Previous experience had convinced me that to be really efficient a grubbing machine should have ample power and ropes that will meet the heavy demands required of them. I found that shovel and axe work is very costly either by itself or in conjunction with a machine. The machine that offered these features, with a host of others, was THE "MONKEY" GRUBBER.

It gave me the power of 260 pairs of hands in a simple and compact form; the lever is short, so that I am able to stand firm-footed and get the full stroke. There are two speeds in the machine, as well as an automatic release that allows me to let off a strain, or as the machine will work in any position, it comes in for all jobs that would require a chain block. It is taken to the job on a pair of wheels like a barn truck, and is rigged for work in a few minutes. The ropes are in lengths that I find easy to handle, and each one is fitted with hook and loop couplings, so simple and absolutely IT for effectiveness. The makers have included a sturdy snatch block with a novel method of securing to the ropes, and also a fine type of firm gripping rope shortener. The latter makes it very easy to accommodate the lengths of rope to the tree or stump being pulled, and is quickly released from the rope. The combination of so many time and labor saving features makes the "Monkey" Grubber a superior grubbing outfit.

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Canned Beans—

Cultural Trials in N.S.W. Successful

A REPORT which appeared in the "Queensland Producer" recently stated that at the present time, practically all canning Beans of the Navy type used in New South Wales are imported from America and Korea. Experiments by the Department of Agriculture, however, indicate that there is no reason why this crop cannot be more extensively grown in certain districts of New South Wales.

Mr. A. C. Orman (special agricultural instructor) said that tests had been conducted in N.S.W. for some time, and the results indicated that good quality Beans equal to the imported article, could be produced in certain areas. Excellent results had been obtained in New England, particularly at Tenterfield.

It had been found that lighter soils gave the best type of seed, because there was less possibility of staining during ripening. Heavy soils tended to promote abundant plant growth, but to retard pod development. Fairly

dry conditions were needed for the best harvesting. The Navy Beans had proved very suitable for canning because they were able to withstand the processing and did not break up as did some of the other types.

Mr. Orman said that, during the past season, three trials were conducted by Mr. G. T. Dawson, agricultural instructor in the Tenterfield district. Apart from the good demand for these Beans in New South Wales, it was considered that any payable leguminous crop for rotation with maize, oats, and Potatoes would be worthy of consideration in New England.

In a report on these tests, Mr. Dawson pointed out that light granite loam soils were used. Seed of the little Navy variety was sown in drills 2½ feet apart, at the rate of 40 lb. to the acre. Superphosphate was applied at the rate of 3 cwt. per acre.

Three sowings were made to ascertain the best sowing for this pur-

pose. The first area was put in at the end of September, the second in mid-October, and the third early in November. In each case the mid-October planting proved easily the best. It was noted that the depth of sowing the seed was an important factor. Best results were obtained when the rows opened up with a Lister implement, the fertiliser then distributed along the furrow, the soil filled in over the fertiliser, then the Beans sown and covered no deeper than 2½ inches. This precaution was necessary, because the young Bean plants were susceptible to fertiliser injury.

Germination of all sowings was good, except where the seed had been covered too deeply. The heavy storms experienced in December resulted in the plots sown on Messrs. Sommerlad Brothers' property being badly washed, and no reliable guide was given by these. The heavy December and January rains encouraged very prolific growth, and the plants "podded up" well. An infection of bacterial blight was also noted.

CANNING FRUITS.

Will There be Overproduction?

The fear that further plantings of trees for canning fruits would lead to overproduction above the requirements of the canneries was voiced by Mr. A. W. Fairley, chairman and managing director of the Shepparton Fruit Preserving Co. in an address to shareholders during December.

Mr. Fairley said that a census showed that despite previous warnings a further 400 acres of canning fruits had been planted last year, and there would be a substantial increase in production in the next five years. The industry had little hope of extending its markets in the East or New Zealand, while Canada was a dwindling market. The only market which could take the increase was the United Kingdom.

Mr. Fairley declared that the industry had never received the full benefit expected from Ottawa. They had expected 7/6 per cwt., which was equivalent to 1/6 a case, but the present preference worked out at only 1/- a case.

Asked whether the British Government had made any overtures to the Australian Government for a reduction of the preference, Mr. Fairley said he was of the opinion that the British Government was not keen to reduce the preference, but the United States had approached the British Government for a reduction.

LEETON CANNERY.

Mr. C. R. Glover, writing in the "Murrumbidgee Irrigator," states as follows:—

The requirements of fruit for the Leeton Cannery for the ensuing

season have been defined by the general manager as follows:—

Clingstone Peaches, 4,500 tons minimum.

Pears (Williams), all available supplies.

Figs, 25 tons White Genoa or similar variety if available.

Plums, 120 tons.

Quinces, 80 tons.

Seville Oranges, 25 tons if available.

INTERESTING ACREAGE FIGURES.

English Acreage Decreases.

Small Fruits. Soft Fruits.

FOR the past three years, the acreage under small fruits in England and Wales has decreased to its lowest total since 1930 at least. Whereas in 1931 the total acreage was 62,023 acres, in 1937 it had dropped to 52,103 acres, represented by Strawberries 21,242 acres, Gooseberries 10,386, Raspberries 5,401, Currants 2,598 and Loganberries and Blackberries 2,495.

In market crops reductions were reported for 1937 in Celery (7 per cent.), Rhubarb (4 per cent.) and Lettuce (23 per cent.). Asparagus, however, increased by 9 per cent. and glasshouse Tomatoes by 11 per cent.

In 1937 minor crops at 73,721 acres were less than in 1936, with 76,665 acres and 1935 with 77,738 acres.

In Potatoes, 1937 production came from 400,000 acres of main crop and 55,300 acres of early crop, as against 1936 with 400,276 and 56,293 respectively.

Imports of Soft Fruits.

The imports of soft fruits (Apricots, Berries, Currants and Cherries) into the United Kingdom has consistently dropped each year from 89,892 cwt. in 1931 to 25,849 cwt. in 1937. Italy and Spain provide the bulk of the Apricots received, Germany and Poland the most Bilberries, Italy nearly all Cherries, France practically all Currants, the Netherlands mostly all Gooseberries and France the bulk of the Strawberries.

Canada's Apples and Pears.

The commercial Apple crop in Canada reached its peak in 1933 when 5,473,000 barrels were produced, but 1937 exceeded the 5,000,000 barrel mark. The total production over the past 7 years has been: 1931, 3,826,000 barrels; 1932, 4,003,000; 1933, 5,473,000; 1934, 4,354,000; 1935, 4,500,000; 1936, 4,115,000; and 1937, 5,070,000. Nova Scotia and British Columbia being the largest producers.

In Pears 1933 also saw the greatest total production with 536,000 bushels. Comparative figures of production over the similar 7 years since 1931 are: 396,000 bushels, 390,000, 536,000, 446,000, 476,000, 432,000 and 408,000. British Columbia supplies the largest quota followed by Ontario and Nova Scotia in that order.

Exports to November 30, 1,692,772 Cases

In the 11 months of 1937, the total quantity of canned fruits shipped overseas is shown below, with destinations and varieties. 1937 has broken all records. The quantities stated represent cases of 2 doz. 30 oz. tins (or equivalent):—

Country.	Fruit		Pine-		Total.
	Apricots.	Peaches.	Pears.	Salad apples.	
	Cases.	Cases.	Cases.	Cases.	Cases.
U.K.	89,243	634,785	700,780	760	1,445,665
N.Z.	22,767	68,204	24,752	64	117,713
Canada	8,692	67,468	6,125	3,000	100,007
East	3,642	9,934	6,682	2,229	22,625
Misc.	1,048	2,361	2,877	132	6,762
Total	125,392	782,752	741,216	6,185	1,692,772

Make Your Export Produce a Safe Investment by Shipping to and through

SOUTHAMPTON

PEARS and APPLES

A few days saved mean the difference between profit and loss

There are many reasons why you should ship your perishable produce—particularly PEARS—through Southampton, England's most modern port. Here are some of them:—

Substantial local markets with a fruit sales room actually on Southampton Docks Estate. Quicker and frequently cheaper transit to Southern and Midland Towns. The Southern Railway of England runs express freights from Southampton to all these centres, saving days and money.

London is reached by express freight trains in three hours from Southampton—All fruit unloaded in Southampton to-day will be at Covent Garden, Spitalfields, or Borough Market for early morning market to-morrow, with days saved as against fruit discharged by ships calling at Continental and other outports first. The slight additional cost, is altogether outweighed by the tremendous advantages of days saved.

Deterioration is avoided by special arrangements for sorting to mark, and quick insulated trains direct to London.

Southampton cold stores available for storage of produce for local consumption or Midland deliveries. Pears can be discharged from ship to cold store in less than 5 minutes.

Before the next exporting season, consider these advantages, and ask for Southampton Discharge for London Markets.

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Motor Cars, Trucks, Tractors

Care of the Tractor

MOTOR power on the farm plays a much more important part to-day than it did in earlier days, and the farmer must have a pretty fair mechanical knowledge to keep each unit in good working order, said Mr. L. Smallcombe in a paper read before farmers' and reported in the last issue of the S.A. Journal of Agriculture.

With regard to the tractor, the owner must give this unit very close attention indeed to get the maximum service from it. Tractors are costly to purchase and costly to break, and one cannot afford to take chances with a motor costing approximately £600 new. The tractor does by far the heaviest work of any motor on the farm, the engine being under full load all the time. There are very few stops and no hills to coast down, as there are with cars, to give the engine a chance to cool off.

A normal tractor in good order works at 2 throttle and does in the vicinity of 1,000 revolutions per minute all day long. A tractor requires very little attention compared with what is done in return; good fuel, good grease, and the best of cylinder oil go a long way towards minimising trouble. Fan belts must be tight and not slipping, and radiators must be absolutely free of all foreign matter or boiling soon occurs whether Summer or Winter.

A check over of the tappet clearance occasionally—about once a week is quite a simple matter to attend to; if valves are overhead type, rockers must be oiled or greased daily. The carburetter needs very little attention once the correct mixture is obtained. The only time a carburetter needs adjusting is when the tractor is moved from one locality to another, and then it is not always

necessary. The sump requires keen attention: it must be drained regularly. Never let the oil level get too low, as the lower it gets the small quantity is circulated more often than a full sump of good, clean, fresh oil.

The small quantity of oil in a low sump finally breaks down and there is no protective film left. Then, of course, run out bearings and broken pistons and rings results. The magneto requires very little attention, a few drops of light oil weekly and a check up of the points to see if make and break platinum points are opening to the correct distance. Plugs need cleaning occasionally. This can be done by dismantling them and soaking them in a caustic soda solution over night. Valves need grinding more frequently on a tractor engine than with a car, owing to the long periods they run under high temperature without cooling off.

Before a busy period begins (usually before seeding) it is a wise plan to dismantle the whole machine, go right through from starting handle to differential, and give everything a thorough overhaul. One is sure then that every part is oiled or greased and tight, and that cogs are at their correct mesh. Most tractors of today either operate on low grade kerosene or crude oil. If on kerosene, it is wise to see that the manifold for vaporising the fuel is really hot. Some tractors take much longer than others. This depends a good deal on the make of machine. If the engine is switched over from petrol to kerosene before it is thoroughly hot, the kerosene is drawn into the cylinders in liquid form instead of vaporised; it then runs down past the pistons, taking the oil from the pistons and cylinders into the sump and diluting the oil.

RUBBER TYRES LESSEN WORK.

Tractors and Transport.

THE equipment of trucks, tractors, sprayers, and Potato diggers and planters with balloon tyres is working a revolution.

In the first place, the range of operation is increased. A man may live in a central town, or out on the old farm, and cover a range of ten miles, seek out the land and the rotation useful to his line of vegetable production, and still do business at the central stand. His loaded trucks can get back from the far point in 15 minutes; his tractor and his sprayer or other tools can change farms in an hour or less.

Rubber tyres have increased the speed of operations. Where teams could hardly cover two miles per hour, many tractor jobs can be done at a five-mile clip, and others still faster. Ten pounds pressure per square inch is usually enough in the big tyres. More than 15 pounds is seldom used. Seven sometimes will do. Traction is improved by soft tyres. The jar is mostly eliminated.

On soft earths and sands big rubber tyres do not sink in. Tractors and rubber tyred trailers are practical for short hauls. Under light pressure, on soft ground, with very little slipping, tyres are long lived.

Rubber-tyred garden tractors now are made in sizes up to five-horse power. Such tractors will plant four rows of Onions at once, and will cultivate four rows. With such a tractor, one man can plant and tend 150

acres of Onions. Such a tractor will pull an eight-inch plough, but cannot plough the acres of crop it can plant and cultivate. It must have larger tractors to stand behind it.

Rubber is eliminating work, and the horse. Rubber is giving men more liberty. Rubber is expensive and so are big machines. It takes more capital, but reduces costs. Rubber for the beginner takes credit, but credit can be had. Rubber is a good thing.

Rubber-tyred tractors now have their drive wheels adjustable to the width of two rows. In cultivating or spraying, the drive wheels span two rows and run in the first and third middles, while the front tyre runs in the central middle.

When such a tractor has planted the crop, with the wheels set as above described, it requires no new adjustments to run those three tyres on top of three rows.

SPRING SHACKLES.

The older type of adjustable spring shackle bolt and certain modern designs are apt to develop side play, and this looseness will cause rattles and allow excessive dirt and mud to find entry to the wearing surfaces. Adjustment is then made to eliminate all but slight working clearance. Steel shims or washers may be inserted at the anchored ends, which are at the front of the rear springs and at either front or rear end of front springs. Avoid over-tightening at either end, which would result in hard riding and broken spring leaves.

HERE'S SOME OF YOUR MONEY.

£7,929,251 in Petrol Tax.

According to official figures, 281,925,541 gallons of petrol were imported into Australia during the year ended June 30 last. The tax on the spirit amounted to £7,929,251, which was an increase of £648,509 over the amount gathered during the previous financial year.

Out of the petrol tax the Federal Government paid £2,936,694 to the States under the Federal Aid Roads Agreement, and took £4,992,557 into consolidated revenue.

During the last financial year more than 33,000,000 gallons of petrol were refined in Australia, the excise on which amounted to £707,228.

REPAIRS ON SUNDAYS.

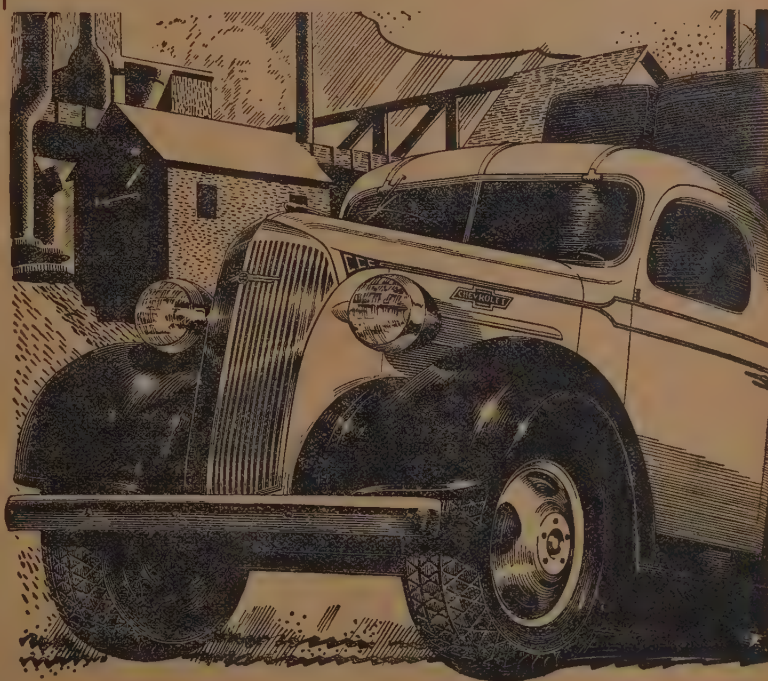
How Germany Serves the Motorist.

It has been decided to keep retail shops open in all German towns for the convenience of motorists on Sundays. In Berlin there will be 20 such depots, a list of them being available from most filling stations. Only repair work necessary to put cars in running order may be undertaken, heavy damage which cannot be seen to immediately having to be left over until Monday. Traffic police, car park keepers and others are given lists of these workshops, while notices are to be erected in the main feeder roads in the Berlin area giving the address of the nearest "Sunday repair depot."

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Fruitgrowers' Federation of New South Wales

Report of December Meeting

A meeting of the board of the Federation was held on December 9 and 10, 1937, when there were present General J. Heane (in the chair), Messrs. F. B. Mackenzie (Kurrajong), H. C. Matheson (Grose Wold), K. H. Todd (Griffith), A. S. Brown (Ourimbah), R. F. Arundel (Wedderburn), A. E. Lillierapp (Mangrove Mountain), E. Ray (Bathurst), W. C. Dickinson (Young), J. M. Ballantyne (Kentucky), A. J. Taylor (Warkworth), P. W. James (Dural), H. A. Stevenson (Murwillumbah), J. Malley (Woolgoolga), L. T. Pearce (market representative), and E. E. Herrod (Secretary). Apologies were received from Messrs. A. E. Herring, A. U. Tonking, and G. G. Moss.

New Zealand Trade Treaty: In view of the visit to N.Z. of Mr. White, Minister for Customs, in relation to a trade treaty between the Dominion and the Commonwealth, it was decided to request the Minister to make representations to the Dominion Government to secure the growers of this State the right to export fresh fruit to New Zealand. In this connection the Secretary was instructed to prepare a comprehensive statement in relation to the embargo, and this was then presented to the Minister by a deputation comprising the President, General Heane, and Mr. A. E. Lillierapp. Mr. A. J. Taylor, who had recently visited New Zealand with the dairy farmers' delegation, reported that he had been informed that trade between the Dominion and U.S.A. in relation to Apples had been of no value to the Dominion.

Export to New Zealand: The Secretary reported that during the month of November shipments of Valencias to New Zealand were as follow:—From N.S.W., 32,329 export cases, from Victoria 17,000 export cases.

Royal Commission of Enquiry—Fruit Industry: The Secretary submitted a brief report on the itinerary of the Commission and the tentative arrangements that were being made. The purpose of the questionnaire issued by the Commissioner was discussed, and it was agreed that the object of the questionnaire was to prepare witnesses for the type of questions that might be asked by the

Commissioner, and also as supplementary evidence.

A.W.U. Claim: It was reported that a number of growers, packing houses and co-operative organisations had been served with a log of claims by the Australian Workers' Union. It was explained that it was not within the province of the Fruitgrowers' Federation to contest that claim upon orchard registration fees, and it was decided that the Fruitgrowers' Association of Employers of N.S.W. be asked to consider the matter on behalf of the industry.

Conditions at Darling Harbor: The continuance of obsolete conditions at the railhead in Darling Harbor invoked expressions of disappointment and protest. On many occasions during recent years, the attention of the Railway Commissioners has been drawn to the absence of overhead cover, the need of unloading platforms, smoother roads, better lighting facilities, etc.; and, up to the present, only the lighting had been improved. It was decided that a further letter be addressed to the Railway Commissioners requesting attention to the matters submitted by the deputation, which waited on the Commissioners in April last.

Road Transport: During the sitting of the Board, a conference was held between the various agents' associations, the Master Fruit Carriers' Association, and the Fruitgrowers' Federation, in relation to the development of road transport; and it was decided that the growth of road transport warranted a survey being made of the position. With this object in view it was decided that the various parties interested should investigate the matter and that a conference should be held again at a later date.

Apple Publicity Campaign: The Board decided to oppose a levy of 3/8ths of a penny per case on production of Apples, suggested at the recent annual meeting of the Australian Apple and Pear Export Council, and alternately suggested that the levy be not imposed on Apples marketed before May 1.

Banana Marketing Board: A resume of the operations of the Banana Marketing Board of N.S.W. was given by

the chairman, Mr. H. A. Stevenson. The book-keeping methods and stationery used was explained and Mr. Stevenson reported that the Board was now operating its own selling floor at the Sydney market, and was erecting its own ripening rooms. It was expected that the ripening rooms would be operating early in the New Year.

Constitution: Certain matters in relation to suggested amendments to the constitution of the Federation were discussed, but definite decisions were deferred, while further consideration was given to the matter and pending the completion of the Commission enquiry.

Apple Grading Regulations for the Domestic Market: On the invitation of the Board, a delegation was received from the Australian Apple and Pear Export Council. This delegation comprised Messrs. G. W. Brown, R. H. Thompson, C. O. Smith, J. B. Mills and R. E. Boardman. The delegation stated that it was their desire to so amend the regulations as would prevent large quantities of low-grade fruit being placed on the Sydney market from the Southern States. It was stated that the Southern States were agreeable to take the necessary disciplinary action, but that this could only be done by an amendment to the New South Wales regulations.

The delegates also stated that it was the policy of the Council to interest themselves in domestic market matters, and it recommended the formation of State committees of growers in each State, with the co-ordinated services of such others as might assist decisions to enable better and sounder marketing. It was explained that all growers, whether exporting or otherwise were members of the State associations, which comprise the Australian Apple and Pear Export Council. The Board of the Federation agreed to the insertion of the word "sound" in the definition of both "Good" and "Domestic" grades, and that "D" grade fruit be allowed to be marketed from November 1 to the end of May, after which date only Granny Smith, Democrat, and Rome Beauty varieties of this grade be allowed to be marketed.

City Markets: It was decided that recommendations be made to the City Council relative to better ventilation of the old markets, and to draw the attention of the City Council authorities to efforts for better sanitation in

the Brisbane markets by the use of sawdust impregnated with formalin.

In view of the varied opinions existing regarding the advisable hour for opening the markets, it was decided that, failing the Council being agreeable to a uniform opening of both fruit and vegetable markets at 8 a.m., that 7 a.m. should be recommended.

150th Anniversary Celebrations: Serious consideration was given to the proposal that the industry should participate in the celebrations by providing a float representative of the industry. The expenses involved in this matter, however, it was decided was too considerable, although the Banana growers would be represented by a float provided by the Banana Marketing Board of N.S.W.

Factory Fruit: Recent negotiations with the Fruit Industry Sugar Concession Committee were reported in relation to direct payment for purchases on the open market, and it was reported that the conditions of purchase as existing during recent years were to be continued with the modification that the minimum quantity for which the agent could be paid direct would be 10 bushels. An interview with the manager of Henry Jones Ltd., elicited the information that between 80 per cent. and 90 per cent. of Wilson Plums purchases had been made direct from the growers or their carriers this year, but it was stated, Wilson Plums would not be purchased in future years.

Year Book: Consideration of matter to be included in the Year Book for 1938 was given, and a number of suggestions were received.

Fungicides and Insecticides Bill: It was decided that the Minister for Agriculture should be advised that the Board hopes that the proposed Bill will be introduced during the present session.

Orchard Registration: It was decided to request the Department of Agriculture to instruct inspectors to check the actual acreage of each orchard. The opinion was expressed that some growers were not aware that non-bearing areas also required to be registered.

THE SIMAR ROTOTILLER.

The Simar Rototiller, now being distributed by Motor Tractors Pty. Ltd., of Sydney and Melbourne, is a boon to the orchardist, vegetable grower and nurseryman. Once over the ground, and the Rototiller leaves the ground in a more perfect condition than can be obtained by ploughing, discing, harrowing, and even rolling the soil. For the nurseryman, a perfect seed bed can be made in one operation.

For the orchardist, the Rototiller is the ideal machine for the work up, down, or across steep gradients. Many Rototillers have been supplied for use on gradients of 1 in 3, the machine being perfectly safe to handle at any angle. It is not necessary to employ an experienced mechanic to operate the machine, any grower can handle it with ease, after a little preliminary practice.

HOW LEVY IS COLLECTED.

By Stamps on Cases.

When the State of Washington, U.S.A., imposed a levy on Apples and Pears recently, the collection was made in a very simple manner. Levy stamps were sold to producers and they were responsible for attaching the stamps to all cases of fruit shipped to market. State officials checked all freight shipments at terminals and markets. The idea is said to have been to prevent culled fruit going on to the local fresh fruit market and to prevent poor grade fruit being sold to outside markets at fancy prices.

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The World's
■ **Best Fruit Market**
■ **Sales can always be depended on for best quality fruit at highest prices.**

Besides its own vast population, LONDON supplies the seaside resorts. Tourists make their headquarters in LONDON and want the best fruit.

LONDON has always been the centre of the Australian and New Zealand fruit trade, and although many efforts have been made to divert it to other ports, the presence of its huge local market with expert distribution agencies will ensure it remaining so.

LONDON is an INTERNATIONAL MARKET where the WORLD BUYERS congregate, and where the highest prices for best produce are always obtained.

All particulars as regards charges, etc., can be obtained from:

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Export & Commercial News

Impressions and Observations Abroad

England's Huge Fruit Trade — Apple Varieties and Sizes Needed — Comparisons with American and Canadian Fruit — Developments in Apple Growing and Gas Storage in England — Trade Agreement Needed With Germany — Expanding Market in India.

(By R. F. Mellor.)

IN ACCEPTING an invitation to contribute my impression of my visit to Great Britain and Europe to the "Fruit World," I desire to say, at the outset, that I did not arrive there until July 15, 1937, by which time the bulk of last season's fruit shipments had been disposed of. Consequently, on some matters, I cannot speak from my own observation, but have to rely on information given to me by members of the trade.

The vastness of the fresh fruit trade in the United Kingdom is amazing; everywhere there is evidence of its magnitude—firstly, the large numbers of distributors and wholesalers; then the number and size of the retail shops, many of which are multiple shops. Then there is the great variety of fruit, and the widespread sources of supply.

For instance, Oranges from five different countries were to be found in one firm's warehouse at the one time. Statistics confirm the conclusion arrived at: they indicate that importations of all varieties of fresh fruit have reached an average of about three-quarters of a million hundredweight weekly. Bananas alone reached 20,000,000 hundredweight in the year.

All fruitgrowing countries of the world appear to regard Great Britain as their market, and one is led to the conclusion that not another country in the world is so well supplied, and has so large a per capita consumption of fruit, as Great Britain. This is not because the retail price of fruit

is particularly low. During my visit the price of Apples was from about 4d. to 8d. per lb., according to variety, quality, and the class of shop. These prices are equal to 5d. to 10d. per lb. in Australia. Beside the enormous total quantity of fruit Australia's contribution appears very insignificant.

Reports from traders and others indicate that a considerable quantity of Australian fruit was of inferior quality.

In Jonathans, the chief complaints were wilting, lack of color, russetting and generally unattractive appearance.

It is most essential that Australian growers endeavor to produce a clean-skinned Jonathan with a good red blush, and refrain from picking them immaturely. The trade in England only wants 2½ in. and 2½ in. Jonathan. In America the larger sizes are retained for the local market. It would be an excellent thing if that practice were generally adopted here with the Jonathans.

Varieties and Sizes.

It is frequently said that Glasgow and Liverpool like large Apples. My enquiries lead me to conclude that in Glasgow their meaning is that they prefer mostly Jonathans that would

come within the scope of the 2½ in. size packs. The representative of a leading firm there indicated that they like about 80 per cent. of 2½ in. with only 10 per cent. 2½ in. and 10 per cent. 2½ in.

A Liverpool auctioneer said that Liverpool likes 2½ in. and 2½ in., but that when Ireland could buy, they liked 2½ in. On the Continent a small proportion of the 2½ in. are acceptable, but 2½ in. are not desired.

If we are to please our overseas customers, we shall have to refrain from selling them unpopular sizes.

The fruit buyer is very much like other people. If we do not supply the article he wants, he will go elsewhere. He is not at all interested in an article which he cannot sell with a margin of profit. Another complaint about Jonathans is that they did not keep as well as usual. This, no doubt, was due to climatic conditions which prevailed in some of the States during the growing season.

Some of the London Pippin and Cleos showed mouldy core; as a consequence the larger sizes in these varieties may not be in demand in the future. I noticed a serious development in a few of the Grannv Smith exposed for sale in retail shops, namely, brown discoloration. It sometimes takes place here after this Apple is removed from cool store. It would be well to keep back any except those grown under good cropping conditions. Some that were left in wholesalers hand overlong were in a deplorable state.

The Grannv Smith is favored as a dessert Apple because of its flavor and juiciness. The well-to-do are prepared to pay high prices for these. If the quantity of Grannv Smith shipped is increased greatly, the middle classes will have to be relied on, and the price will probably come down until the premium over other varieties is only 6d. or 1/- per case.

The Sturmer showed a considerable amount of bruising, and the appearance of many was very inferior partly due to russetting.

Full Weight Needed.

One of the most important essentials for Australia to observe is to pack tightly and give good weight—minimum of 40 to 42 lb. net. A little case-marking would not be considered serious if full weight were given. Sometimes our cases only contain 36 lb. net. The desire for the American case with a Crown pack is not universal. Some merchants prefer the standard case with a medium bulge on top and bottom, as they consider the fruit less likely to bruise during handling. At present, the Crown pack is not universally adopted in America.

At the time of my visit the American Apples on the market were practically all Gravenstein. At the

beginning of September I visited the docks at Liverpool, on the arrival of a considerable shipment. This consisted of fruit under quite a number of different labels. Some of the Apples showed a fair amount of bruising and case-marking, and some bitter pit. There was very little color, and the fruit was well forward. It was noted that one leading brand of American Gravensteins had the words "Grown without irrigation" as a prominent feature on the label.

Nova Scotia Apples in barrels were seen at Covent Garden. These Apples were not wrapped, and were very badly graded; barrels branded "2½ in and upwards" contained a percentage of 2½ in. Apples.

The defects just referred to indicate that there is still some advance to be made by other countries besides Australia before perfection is obtained. On the other hand, Bartlett Pears from America, packed in standard Pear cases with a 2 in. bulge, were arriving without bruising or case-marking, and were perfect in appearance, although lacking in flavor. The lid of the Pear case is bent wet before lidding. This, however, is not done for Apples.

The

Progressive English Grower

now packs his Apples in softwood standard cases, and this advance is welcomed by the English fruit merchants. Plums, Tomatoes, Cucumbers and Rock or Sweet Melons are also packed in new white softwood cases or trays, so that an attractive display has become a prominent feature in the marketing of locally grown, as well as overseas, produce. Indeed, I saw brightly colored Worcester Pearmain Apples with a perfectly clear skin, and well graded and packed in standard cases, which would have put some of the Australian fruit well in the shade. English growers also pack a half-size Canadian type of case (not merely a Canadian case cut in half) containing about 20 lbs. of fruit.

Research at E. Malling.

I took the opportunity of visiting the East Malling Research Station, and there saw several varieties of Apples which are grown in Australia being tried out experimentally. These included the Jonathan, Rokewood, Grannv Smith, and Democrat. The color was excellent and the skin free from russet.

I also visited some large orchards in Kent, and saw some of the gas stores. In the

Gas Storage System

the temperature is brought down to 40 deg. Fahr. and the gas given off by the Apples is retained in the chamber, at the concentration found necessary for each particular variety stored. For Bramleys, the variety most stored, the correct concentration of gas is 8 per cent. After filling, the store is kept closed, and instruments are provided for showing the gas concentration.

The cooling is accomplished by means of cool air which passes through the chamber in a large pipe but is never let free into the chamber. It is said that Bramleys will hold for several months in the gas store, and will keep for three months after coming out; whereas the same variety in the cool store will only keep for one month after leaving the chamber. For cool storage alone the temperature is 38 deg. Fahr. The C.O.P. do not store well for a lengthy period. They lose flavor. Gas storage is not suit-

able for holding more than one variety in a chamber.

During a short

Visit to the Continent

I called on some of the leading fruit importers. The German buyers would welcome Australian Apples, but, at the present time, owing to Government regulation, it is impossible for them to do business with our fruit. This state of affairs seems likely to continue until Australia makes a trade agreement with Germany. In some other countries there is a sale for limited quantities of Apples and Pears.

Trade with India.

Before closing I think it worthwhile to say that whilst returning I met some Australians who had been resident in East Bengal, India, for some years. They stated that it is very difficult to purchase Australian dried, canned and fresh fruit. Sometimes they are able to purchase locally grown inferior Apples, for which they have paid 8 annas (9d.).

They would welcome the opportunity of buying better Australian fruit, and consider there is likely to be an expanding opportunity for sales.

India to-day is making great progress, and is likely to advance much more quickly during the next few years. The standard of living of the great majority of Indians is extremely low, in some parts the average wage being under 2d. per day, and the population living on one meal in two days.

There is a gradually increasing number, however, who have a comfortable standard. For instance, in Calcutta now nearly all the barristers are Indians, whereas not many years ago they were mostly Europeans. Similarly, Indians are replacing Europeans in official positions.

Apart from the humanitarian aspect, it is to Australia's interest to assist in every way possible in raising the standard of living in that country, because when this is done India will become a very valuable market, and Australia has the advantage of its close proximity.

With the concentration of nearly all fruit producing countries on the English market, and the progress of fruitgrowing in England, Australia may, at some future time, find it impossible to compete there. Should this time ever arrive, an alternative market in India would be of untold value.

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Liverpool is the second port in the United Kingdom, and in the value of its exports it ranks first. The Port serves a very densely populated area, being the principal inlet and outlet on the Atlantic side for the trade of the vast industrial centres of Lancashire and Yorkshire, Staffordshire, Derbyshire and the Midlands.

Fruit is one of the most important commodities imported into Liverpool, where excellent dock facilities assure economical handling and prompt despatch.

With perishable articles such as fresh fruit, speedy distribution is the essence of success, to enable the fruit to reach the consumer in the freshest possible condition. Liverpool prides itself on being second to none in the

matter of port equipment, mercantile and transport facilities, for the rapid discharge and prompt distribution of cargoes of perishable commodities. Ample rail and road transport to all parts of the interior is available, and it is no uncommon thing for cases of fruit on a steamer arriving early in the morning to be discharged, sampled, sold, transported to inland markets in Yorkshire or Lancashire, and actually

be on offer to the public in the retailer's shop that same evening.

The dock system at Liverpool is second to none, ensuring a rapid turn round to vessels with the largest cargoes. Rapid despatch is a feature of the Port maintained consistently week by week and not merely arranged to meet special sailings. This rapid turn round in port enables a vessel to increase the number of voyages it makes per annum to the benefit of shipowner and trader.



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Apples and Pears for Marketing in Australia

PROPOSED RAISING OF MINIMUM SIZES AND ELIMINATION OF DOMESTIC GRADE FOR APPLES AFTER MAY.

A FRUIT-GRADING CONFERENCE convened by the Australian Apple and Pear Council was held at the rooms of the Fruit-growers' Federation of New South Wales, on Wednesday, December 8, 1937, at 11 a.m.

There were present: Messrs. R. H. Thompson, C. O. Smith and P. H. Thomas (Tasmania), G. W. Brown, F. Moore and J. M. Ward (Victoria), J. W. Blick, P. S. MacDermott, C. G. Savage, H. Broadfoot and Atkins (New South Wales), J. B. Randell and H. J. Bishop (South Australia), and R. E. Boardman, Secretary.

Apologies were received from Messrs. A. E. Herring and E. Ray (New South Wales), H. Barnes (Queensland), A. G. Strickland (South Australia), and G. W. Wickens (Western Australia).

Mr. Brown was elected chairman.

Mr. Thompson stated the conference had been called at the request of the Tasmanian State Fruit Board. He felt that growers in Tasmania, also in Victoria and New South Wales, had had a lesson this season in the matter of low prices. Tasmania did not now impose restrictions on the fruit going forward. The extent of the blemish had been made the basis of grading; other aspects should be considered, such as varieties and sizes.

A letter was received from Mr. H. Barnes, Director of Fruit Culture, Brisbane, regretting inability to attend and stating that, provided standards were unanimously agreed upon and suited Queensland, he saw no reason why that State should not agree to them.

The chairman read a statement prepared by Mr. J. B. Mills, setting forth the necessity of protecting the consumer in supplying varieties when at their best only, thus doing away with over storage, also proposing that Good and Domestic grades be permitted to be sold up to a stated period—say up to the end of May.

Mr. Ray, of Bathurst, New South Wales, wrote commenting on Mr. Mills' proposals and objecting to them principally in regard to Apples superficially marked by hail. In the past, Grade Standards had been set up using the size of the blemish as the guide instead of taking into proper consideration the inherent quality of the fruit.

A letter was read by Mr. C. O. Smith also commenting on Mr. Mills'

proposals and suggesting that care be exercised not to impose harsh restrictions, because of possible legal repercussions. Further, in limiting the period for the sale of lower grades it would be necessary to have different dates for each group: "Good" grade could be modified by allowing a little more blemish on the larger sizes and cutting out the smaller sizes of such varieties as French Crab, Sturmer and Yates. If this were done "Domestic" grade could be eliminated entirely.

Continuing, Mr. Smith expressed the view that by getting the Sydney agents to eliminate the 6d. minimum commission, and working on 7½ per cent. right through, the incentive to attract larger consignments by high quotations would be removed, and much unwanted fruit would be kept off the market. Provision should be made to allow revision of the regulations at short notice to meet abnormal conditions, such as in 1936. The mistake made by very many growers was that of holding on too long for each variety, resulting in an undue percentage of fruit past its

prime. Condition was more important than superficial blemish. The altering of the New South Wales regulations on these lines was desirable.

After full discussion, in which all phases of the situation were reviewed, it was decided, on the motion of Messrs. Thompson and Moore; that two committees be formed to consider the points brought forward and to report separately: then for the full committee to meet to prepare a joint report.

Committees were appointed as follows:—

(a) Messrs. Brown, Randell, Thompson Smith and Moore.

(b) Messrs. Savage, Broadfoot, Atkins, Ward, Thomas, Jenkins and MacDermott.

The Committees met separately in the afternoon of December 8, and resumed in full session the same evening.

Mr. Brown presented the report by Committee (a), which set out, among other things, that while the principle of limiting the marketing of varieties within defined periods was believed in, and the advertising of varieties within that period, the gazettement of regulations in this connection was not recommended at this stage.

Mr. Savage presented report of Committee (b), stating the belief that the gazettement of regulations as to the limited period for marketing stated varieties was legal. Details were pre-

sented for discussion as to limited marketing periods for stated varieties, and proposed alteration to present regulations as to sizes and grade designations.

After full discussion the following was unanimously decided upon—

(A) Policy.

(1) This Committee believes that in principle it is desirable to limit the marketing of varieties of Apples within defined periods and that varieties be advertised within those periods.

(2) We do not recommend regulations in this connection at this stage. The Committee would like to report, however, having given consideration to the policy of such subsequent regulations as may be brought forward, in which event a proviso should be inserted to the effect that if any grower considered he would suffer hardship because of the special keeping quality and flavor of his varieties there be a board of appeal by which he could submit samples in applying for the extended marketing of the specific variety.

(3) Realising the difficulties which exist in relation to gazettement of regulations at this stage and the resistance by growers which would probably be experienced, this Committee recommends (a) that for the time being the best method would be to set out a list of dates recommended at which the marketing of stated varieties should cease; (b) that growers be definitely advised that varieties would only be advertised within the defined



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period stated, and that the full co-operation of the public would be sought to purchase only the specific varieties, within the defined period.

(4) That is the opinion of this Committee the markets committee of the Apple and Pear Council should assume the function of administering the details set out in this memorandum and that the work be correlated according to the conditions prevailing in the several States.

(5) The foregoing is dependent upon funds being available for the needed advertising and this Committee recommends that every effort be made to secure the needed funds by legislation.

(6) That a list of recommended varieties for interstate markets be drawn up with a view to the progressive elimination of varieties.

(B) Grading Regulations.

The word "sound" to be included in the definition of "Good" and "Domestic" grades for both Apples and Pears—

Re Apples: That "Domestic" grade be eliminated and that Blemish Tolerance in "Good" grade be amended as follows—

Apples—2½in. and over, blemish not to exceed ¾in., under 2½in. the permitted blemish is to be ¾in.

Superficial Hail only—

Apples—2½in. and over, the permitted blemish to be 1in., under 2½in. the permitted blemish to be ¾in.

Committee (B) submitted a list of varieties and proposed last dates for sales: it was decided to submit these to the Australian Markets Committee as a basis for discussion for circulation to the States concerned.

A Committee consisting of Messrs. Mills, Thompson, Smith, Brown and Moore was appointed to bring the findings of the Grading Conference before the Board of the Fruitgrowers' Federation of N.S.W. on December 10.

If the Federation's Board would not agree to the elimination of "Domestic" grade the following be recommended as an alternative—

"Domestic" grade of Apples to be allowed to be sold (all varieties), until the end of May, after which date, only Granny Smith, Democrat and Rome Beauty varieties of this grade to be allowed.

Alterations to the regulations for the 1938 season were recommended, the details to be reviewed in December, 1938. It was proposed to raise the minimum size of most varieties.

THE IMPORTANCE OF PREFERENCE.

THE EMPIRE INDUSTRIES Association has been recently dealing with the subject of importation of goods into the United Kingdom, under the heading of the "Threat to Imperial Preference." In advocating that Imperial Preference be not watered down, the article proceeds:—

"A few figures are given illustrative of the importance to us of our exports to Empire countries, and indicating what we stand to lose if the policy of Imperial Preference is watered down.

"Although the Empire overseas represents less than one-quarter of the population of the world, it takes nearly half of the total exports from Great Britain. In the first six months of 1937 exports from U.K. to Empire countries totalled £119,343,000, as compared with £131,871,000 to foreign countries. This represents an increase on the corresponding period of 1932 of £35,510,000 in the case of Empire countries, and of £28,671,000 in the case of foreign countries.

"The five self-governing Dominions, Canada, Australia, New Zealand, the Union of South Africa and the Irish Free State, have a combined population of about 30,000,000, as compared with some 1,500,000,000 in foreign countries, but despite their small population these Dominions take no less than 28 per cent. of total exports from the United Kingdom; in the first six months of 1937 they took between them over £3,000,000 more than the whole of the Continent of Europe.

"The Union of South Africa, now Great Britain's largest individual market, which has a population of approximately 2,000,000 white people and 7,000,000 natives, took in the first six months of 1937, £20,391,000. The whole of the foreign countries in South America, Central America and the West Indies, between them took approximately £18,000,000 worth of British goods in the same period. As these groups of foreign countries include many important markets such as Argentina, Brazil and Chile, to mention only three, it will be seen how much more important it is to Britain to consider Empire countries in preference to foreign countries.

"Again, although the population of the United States of America is about 18 times as great as that of Australia, in the first six months of this year the Commonwealth purchased £16,846,000 worth of British goods, while the United States bought £16,490,000."

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Interstate Market Notes & Prices

FRUIT PRICES IN THE SYDNEY MARKET.

Survey of Operations for Period November 25 to December 25, 1937.

INCREASING supplies of stone fruits and a gradual crescendo in the temperature of the weather, have been important features of the past few weeks. Fortunately, the one is the complement of the other, and as the weather settled into a steady heat so also did the demand for Summer fruits increase. We have experienced our periods of oversupply, and this was particularly noticeable with Wilson Plums, early Peaches of small size, the first rush of Apricots, and the ever reappearing Apple. All other ills have been of a transitory nature, but the Apple of average quality—and in its excessive quantities—we appear to have always with us. Again this week we received more than 13,000 cases from Tasmania, and further supplies of small Yates from Victoria—most of which had only a forlorn hope of being cleared at a payable figure. Granny Smith from this State are still plentiful, and the probability of quick breakdown induced accommodating prices to be offered to those who at this late season require Apples. New season Apples have also been plentiful, but the usual 12/- to 14/- has not been in evidence, and, in fact, only latterly have the more solid types, such as Willie Sharp, Twenty Ounce and Christmas Kitchen attained to 8/-, with Granny Smith to 9/- per bushel.

Competition for locally grown stone fruits is just being experienced from Victorian introductions, which State is forwarding Peaches with a few Plums and Nectarines. Clapp's Favorite Pears have also appeared, and the Williams should not be long in coming.

The Christmas market was a substantial one, trade to the Island, the East, the north of Queensland and the country districts of N.S.W. being the equivalent of, or better than, recent years. Contrary to the experience of recent years, the Christmas Eve market to-day has been an excellent one for most fruits other than Apples. The retail trade purchased with greater freedom than for years past on Wednesday and Thursday, and again reappeared on the Friday for further supplies of Summer fruits picked on the hard side to carry over the three holidays. Peaches, Cherries and Tomatoes benefited chiefly by this last minute demand, and those speculators who anticipated the continuance of the hot, fine weather being experienced, have netted a handsome result. The prices quoted below are those of the Christmas Eve market and are, therefore, only of a temporary nature, unfortunately.

Throughout the past four weeks Valencia Oranges have been quite plentiful, the development of Black Spot on the Coast necessitating quick marketing of most fruit. As a result, plain and standard grade predominated, and special quality fruit was scarce. The special quality, however, was not generally in great demand, with the exception of shipping requirements, and these were generally supplied by orders direct to the packing houses.

Export to New Zealand continued steadily, much of the best fruit from the Murrumbidgee Irrigation Area leaving for the Dominion.

Lemons from Coastal regions continued, although late in the year, and many growers who usually hold cured

fruit until later in the season, considered it wise to market. Cured fruit has ranged around 8/- to 10/-, and very few brands attained to the 15/- and 16/- quoted.

Apples: Fancy and Good—N.S.W., new season, Twenty Ounce, W. Sharp, Xmas Kitchen, 4/- to 8/-; Granny Smith, to 9/-; others 1/- to 5/-. Old season, Granny Smith (N.S.W.), 2/- to 12/-; Delicious (N.S.W.), 9/- to 17/-; Crofton and Democrat (Tas.), 5/- to 8/-; French Crab and Sturmer Pippin (Tas.), 1/- to 5/-; Yates (Vic. and N.S.W.), 1/- to 8/6. Extra Fancy higher.

Pears: William (local), 5/- to 8/-, few to 12/-; Clapp's Favorite (Vic.), 6/- per bushel.

Apricots: N.S.W.—Inland, 6/- to 7/-; special large to 8/-; small and over-matured, from 3/- per half case.

Bananas: N.S.W. and Q'land.—Regulation graded, first quality fruit. Six, seven, eight and nine inch, 15/- to 21/- per tropical case. Fully colored and over-ripe fruit lower, specially selected country order fruit higher.

Cherries: N.S.W. — Orange and Goulburn Districts, most sales 6/-, special 7/-, few higher, small from 4/6 per quarter bushel case.

Citrus Fruits.

Grape Fruit: N.S.W.—Local, few special, 12/- to 14/-; Inland, 6/- to 9/-; few 13/- per bushel; 6/- to 11/- per two bushel crate. Cal., 30/- to 32/- per Californian case.

Lemons: N.S.W., Special and standard—Local, counts 88 to 138, 1/- to 3/- bush; counts 150 to 252, 4/- to 6/-, few 8/- bush.; plain grade, 6d. to 3/-; Inland, 8/- to 16/- bush; cured to 10/- bush. Victorian—8/- to 10/- bush.

Valencias: N.S.W.—Local, standard, 6/- to 9/-; plain, 1/6 to 4/-; special (few only), 7/- to 11/- bush; Inland, 8/- to 12/- bush.

Mandarins: N.S.W.—Second crop, local, Emperor, 6d. to 5/-, few 7/- per bushel, practically unsaleable.

Grapes: Q'land.—Black Hamburg, 10/- to 14/- half bush.

Melons: N.S.W.—6/- to 10/- bush. Q'land.—Cantaloupes, 12/- to 16/- per tropical case; Cal. Cremes, 9/- to 12/- tropical case.

Mangoes: Q'land.—6/- to 9/-; few 10/- per bushel.

Nectarines: N.S.W.—4/- to 7/-, few large special to 10/-; inferior lower per half bushel. Vic.—5/- to 10/- per bushel.

Peaches: Vic.—7/- to 14/- bush. N.S.W.—Most sales 4/- to 6/-; inferior and small, from 3/6, few large special to 8/- per half bushel.

Plums: N.S.W.—Most sales 2/6 to 5/-, some large special 5/- to 8/- half case, inferior lower. Vic.—4/- to 6/- bush.

Papaws: N.S.W. and Q'land.—8/- to 15/- tropical case.

Passion Fruit: N.S.W. and Q'land.—6/- to 9/-, inferior lower per half bushel.

Pineapples: Q'land.—12/- to 16/-, few to 20/- trop. case.

Strawberries: N.S.W.—4/- to 12/-, few 18/- dozen boxes.

Tomatoes: N.S.W.—Colored to 15/-, green from 4/- half bushel.—L. T. Pearce, Market Representative, Fruit-growers' Federation of N.S.W.

QUEENSLAND.

Brisbane (20/12/37). — Messrs Clark & Jesser report as follows:—During the past few weeks we have been heavily supplied with stone fruits, and this has had a bad effect on the sale of Apples, small sizes being very difficult to sell. Ruling values at present are:—Apples: Yates 2½ to 2¾, 7/- to 8/-, 2¾ 6/- to 6/6, small sizes 4/- to 5/-; Demo., 7/- to 7/6, small 4/- to 5/-; cookers, Lord Nelsons and Twenty Ounce, 5/- to 6/-; Pears: W.C. and Jos., 13/- to 15/-. Oranges: Vals., 10/- to 12/-. Lemons: Very scarce, 13/- to 15/-. Cherries: 6/- to 7/- per tray. Peaches: Wiggins, 3/6 to 4/6. Plums: Wilson's 4/- to 5/-; Santa Rosa, 3/- to 4/-; Shiro, 3/- to 4/-. Nectarines: 4/- to 6/-. Apricots: 5/- to 7/-. Papaws: 2/6 to 3/6 dump case. Tomatoes: 4/- to 5/- case. Pineapples: Smooth, 9/- case; roughs 9/- to 10/- case.

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ON THIS PAGE FOR FRUIT FOR EXPORT
OR SALE ON THE ADELAIDE MARKET

Brisbane (20/12/37).—Messrs. W. Arkell & Sons report as follows:—Apples: Dem., choice ½ to ¾, 4/- to 7/-; S.T.P., choice ½ to ¾, 3/- to 6/-; Yates, choice ½ to ¾, 3/- to 6/-. Oranges: Choice, 138-163, 10/- to 12/-; small and large, 8/- to 10/-. Lemons: Choice, 10/- to 17/-. Cherries: 5/- to 7/-. Plums: Wilson, 4/- to 7/-; others 3/- to 5/-. Peaches: 3/- to 5/-. Apricots, choice, 5/- to 8/-.

VICTORIA.

Melbourne (3/12/37): Quotations were as follow (at a bushel case, excepting where otherwise stated):—Apples—Eating, Del. 5/- to 8/-, few higher; Jons. 4/- to 7/6, few higher; other varieties 4/- to 6/-. Do., cook-

ing, 2/6 to 5/-, few higher; new season's, 2/- to 4/6. Apricots, 3/- to 8/-, few special local higher; inferior lines lower. Oranges—Val., average standards, 5/- to 8/-, according to counts; selected standards, to 9/- and 10/-; few specially selected higher. Lemons, 4/- to 6/-, few good standards to 7/- and 8/-; selected higher. Grapefruit, average standards, 5/- to 8/-; selected to 9/- and 10/-; few specially selected and wrapped higher. Nectarines, 6/- to 8/-, few higher. Peaches, 1/- to 4/-, few special higher. Pears: Dessert, 5/- to 8/-; culinary, 4/- to 6/-. Papaws, Q'land., 10/- to 15/- double case. Plums, 2/- to 6/-. Cherry Plums, 1/6 to 2/6. Bananas, Q'land., 6's, 8/- to 9/-; 7's, 9/- to 10/-; 8's and 9's, 11/- to 12/- double case; inferior and ripe lines lower. Pineapples, Q'land., 10/- to 14/- double

case, few special higher. Passionfruit, 5/- to 10/- half-case, few higher. Tomatoes, 2/6 to 5/-, few specials higher.

SOUTH AUSTRALIA.

Adelaide (31/12/37).—Apples (eating) 3/- to 6/- case, do. (cooking) 3/- to 4/-; Apricots 5/- to 6/-; Bananas (Q'ld.) 20/- to 22/-; Cherries 16/- to 18/-, do. (light) 14/-; Figs 5/-; Gooseberries 5/-; Lemons 6/- to 8/-; Oranges (common) 7/- to 8/-, do. (navel) 10/-; Passionfruit 30/-; Peaches 5/- to 7/-; Pineapples 18/-; Plums (light) 4/-, do. (dark) 5/-; do. (Japanese) 4/- to 6/-.

WESTERN AUSTRALIA.

Perth (29/12/37).—Apples, G.S., dumps 14/- to 20/6; Citrus: Val. Oranges, flats, 6/- to 12/-, dumps 9/- to 18/6; Lemons, flats, 3/6 to 9/6; Stone Fruit: Peaches, flats, 2/6 to 12/-; Apricots, flats, 1/6 to 9/-; Plums, flats, Shiro 1/- to 6/-, Santa Rosa 3/- to 8/6; Cherry 1/- to 4/-. Other lines: Grapes, open, 5/- to 7/6; Tomatoes, 1/- to 4/6.

NEW ZEALAND.

Dunedin (24/12/37).—Messrs. Reilly's Central Produce Mart Ltd. report that the week has been a particularly busy one, with heavy supplies of all lines coming to hand.

For the Christmas trade ample supplies of fruit and vegetables are available, and prices are reasonable.

Increased supplies of Apricots and Peaches are arriving, and values are lower. Cherries are also in good supply, with a satisfactory demand for high quality fruit.

Heavy consignments of cool store Apples have been received, but only for first grade lines is there any demand, values being low for other than best quality.

Small consignments of Strawberries are still arriving, and values have firmed.

Raspberries are now in better supply, with a slightly better demand, although values are still on the low side. Black and Red Currants have a better enquiry.

Values for Tomatoes have firmed, and supplies are on the short side.

Very heavy supplies of Australian Oranges arrived ex the "Maunganui." Supplies were much in excess of the demand, with the consequence that low values had to be accepted to clear. During the week Jamaican Grapefruit and Oranges came to hand ex the "Port Hobart." The fruit was in excellent condition, and is meeting with a fair enquiry. Ripe Bananas are selling well.

Prices (Per Case): Australian Oranges: Vals., 15/- to 22/6. Cal. Lemons: 65/-. Grapefruit: 35/-. Grapes: Emperors, 25/-. Bananas: Ripes, 25/-. Pines: To arrive. Jamaican Oranges: 25/- to 27/6. Jamaican Grapefruit: 32/6. Canadian Del. and Jon.: 23/6. N.Z. Apples: Del., choice, 6/- to 8/6; Sturmeis, 6/- to 11/6; inferior grade dessert Apples, 3/- to 4/6. N.Z. Lemons: 14/- to 16/-. Per Half Case: Nelson Tomatoes: 10/- to 16/-. Peaches: 2/6 to 5/6. Apricots: 4/6 to 7/-. Cherry Plums: 2/6 to 4/6.

NEW REGISTRATION.

Slater, James, Pty. Ltd. Capital: £5,000 in £1 shares. Objects: To carry on the business of fruit merchants and dealers, etc. Subscribers: Robert C. Cathels and John C. Brown (1 share each). Reg. Office: Sydney. Regd. 9/11/37.

BUSINESS CHANGE.

Toong Chong & Co. (Kwok Chee Toong and Charlie Mah Chut), 17 Lackey-street, Sydney, fruit merchants. On 26/11/37 George Mah Chut became the owner. Reg. 26/11/37.

FRUITERS FINED.

Selling Oranges with Red Scale.

Three local fruit shop proprietors were recently fined 5/- each, with costs, by Mr. J. McElroy, P.M., in the Grafton Police Court, for exposing for sale Oranges affected with Red Scale.

The Oranges were stated to have come from the Murrumbidgee Irrigation Area, and Mr. C. M. Pollock, who appeared for the defendants, claimed that they were really being penalised because of lack of co-operation between the growers in the area and the distributors, and also because of lack of vigilance by fruit inspectors in other centres. He said that red scale did not affect the edible quality of the fruit.

QUEENSLAND.

The estimated Apple crop is around 250,000 cases of which it is expected some 20,000 cases will be exported overseas.

Granny Smiths are showing for an increase of 10 per cent. over last year; Delicious 15 per cent., Jonathans 15 per cent., and Dunns 50 per cent.

So far the growing season has been highly favorable. Granny Smith is the principal variety exported. In fact, so favorable have been the growing conditions that the Grannies appear to be running to large sizes—a large percentage being too big for the U.K. market and suitable therefore for the local market or export to Eastern countries.

A new sherbet has come on to the market in U.S.A. It is a by-product of the Nectarine, and is said to be finding favor with the public.

Citrus lead the list, with vegetables in second place, in San Diego County's agricultural production for 1936, representing a value of £2,680,000.

Four unions are attempting to organise farm laborers in Orange County (Calif.). It is claimed that in every case the movement is being led by Communists.

Herbert Wilson Pty. Ltd.

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NEWCASTLE.

Good Market For Fruit.

Newcastle, often referred to as the Birmingham of Australia, supplies the whole of the Commonwealth with all classes of steel and iron products. The growth of the city during the past ten years has been phenomenal. For many years, Newcastle has not been receiving the best quality fruit and vegetables. It has always been regarded by growers as a city that did not require high-class produce.

To-day, Newcastle will take large quantities of fruit and vegetables of the first grade, for which good prices will be realised. No longer is it a city that has a market for poor quality fruit and vegetables, and growers will find Newcastle responsive if they send along their best grades. The greater portion of supplies come from the Sydney markets, and the double handling proves expensive. What is wanted is a direct continuity of supply from the growers of better class fruit and vegetables.

The population of Newcastle is about 200,000, mostly dependent upon the coal and iron and steel industries. This population is constantly growing, and the requirements of this market for primary produce is on the improve. Large quantities of fruit are necessary to supply Newcastle and the adjacent towns of Cessnock, Maitland and Kurri Kurri. Growers interested in catering for this market will find that fruit of good quality, well packed and graded, will realise maximum values. The local market is large and up-to-date, cold storage facilities are excellent, and there is little difference in boat or rail freight.

BUSINESS CHANGES.

McEnnally, W., & Co. (John N. and Arthur M. Weymark and Harold G. McEnnally), 30 Steammill-street, Sydney. Fruit merchants. On 30/9/37 Harold G. McEnnally retired. Regd. 14/10/37.

Quality Fruit (John N. and Arthur M. Weymark and Harold G. McEnnally), 30 Steammill-street, Sydney, fruit merchants. On 30/9/37, Harold G. McEnnally retired. Regd. 14/10/37.

Poultry Notes—**Preparing for Next Year.**

Timely Advice by an Expert.

At the November meeting of the Poultry Breeders' Educational Society, Mr. W. W. Scott, the well-known poultry judge and expert gave the members some excellent advice upon how to prepare for next year's work in poultry breeding and keeping. Since his advice applies equally to the small poultry-keeper as to the commercial egg-producer, we have reprinted a portion of his lecture which appeared in the "Australasian Poultry World."

"I believe," said Mr. Scott, "that in preparing for next year's work, we must recognise the unfortunate fact that mortality is still too high, and that now is a good time to consider all avenues of keeping this loss within reasonable limits. It is no good patting ourselves on the back and saying that Australian poultry mortality is so much less than that in England and America and therefore we do not have to worry."

When mortality rises above 7 per cent., he argued, poultry farming becomes a doubtful economic proposition. There are a few things that we can consider in combating the disease problem and early preparation will help.

Early Efforts.

He is quite convinced that too few breeders properly prepare for the Autumn. Make up your mind what particular system you will follow and then think out how you are seriously going about it. Do this in January, do not wait till near the breeding season.

Epsom Salts: He is a great believer in the use of Epsom Salts, and advises its heavy use in January to prepare the young stock and to avoid chicken pox, which comes along too regularly in some districts. In N.S.W. the mosquitoes bring it and many breeders find that Epsom Salts lessen the danger. The proportion he advises is $\frac{1}{2}$ lb. to 100 birds once per week. If feeding dry mash, give Epsom Salts in an extra small feed of wet mash, not in the water.

Sulphur: In February, if you are not in the habit of giving sulphur, do it in large quantities during this month. Small quantities are of no use. The proportion is one heaped tablespoonful for 20 birds. It is

cheap, do not be afraid of it, do not put it in the water, as it will not dissolve and is useless in the drink. Give it in the mash. In February give it once per week, in March twice per week, easing off gradually afterwards in later months. Sulphur helps the birds to grow feathers. You will have stronger chicks and they will go through the moult better if they have plenty of sulphur.

You have often noticed scurf on the birds; sulphur opens up the pores and relieves tightness of the feathers, it also stays in the system and helps new feather growth. Birds fed plenty of sulphur have greater resistance to disease.

Linseed: Use linseed during the feather growth. He means boiled linseed, not linseed meal. Calcutta linseed, he finds, is the best. Boil 3 lbs. in a kero. tin (4 gals.) of water, let it simmer with occasional stirring until cooked enough to turn into a jelly when cool. Good linseed will sink to the bottom when put in the water, poor quality will be more inclined to float. This is a good working test.

Use it to mix the mash instead of using water. Use both seeds and liquid mixed to the consistency in which a ball of it dropped will break, not spread into a pancake. The use of linseed will materially help to prevent disease.

Douglas Mixture: The use of this mixture is most effective during the rump months of April, May and June. The making of it is simple if the following directions are followed: $\frac{1}{2}$ lb. of sulphate of iron to 1 oz. pure sulphuric acid. The iron must be of good quality. The preparation requires caution as, improperly done it can result in burns or an explosion. Place the crystals in an earthenware vessel and pour over them 2 gals. boiling water. Stir well and add the acid in a dribble, stirring well. The result should be a green liquid.

Use in the proportion of 1 teaspoon to each pint of drinking water, twice per week, in earthenware vessels. Douglas mixture can be mixed into the wet mash, but it does not give as good results as in the drinking water. It is a wonderful antiseptic and in the drinking water it has the double benefit of cleaning out the bird's mouth, nose and throat. Do not give Epsom Salts and Douglas mixture on the same day, nor on a warm day.

Breeding from Pullets.

He has been led to approve, under certain conditions, of breeding some stock from youth on both sides, and advised those present to experiment along these lines. Make up one pen of unrelated birds and, by careful breeding, different family strains can be evolved. When he says "young," he does not mean immature pullets, but vigorous, selected birds that have not yet gone through the strain of laying and the moult.

A special breeding pen should be made by using a wired yard 21 x 21 feet, containing 7 pens each 3 feet wide. Each of the females thus have a 3 x 6 ft. pen, and all have an outside run approximating 15 x 21 feet. The end pen is kept for the cockerel and the hens are released from their individual pens each day—after laying. The house or pens should be comfortably high, say 6 ft. 6 ins. in front, sloping back to, say, 5 ft. at the rear. By this method the breeding can be controlled and has been proved very satisfactory.

Selecting the Breeders.

Start in January to look your flocks over. Do not wait until the breeding season is on you to select the breeders. Throw out any crippled or otherwise deformed birds. Feel every bird frequently at night and actually get to know each one. Do not attempt to breed from any doubtful birds. Cull in February and again in March. Actually, you should cull all the year round, but for breeders, cull at the above dates at least, rather than wait till you actually need the breeders.

If you have to introduce new blood, introduce it by females, not males. Breeders should be bigger in bone than we like to see on the show bench or the laying shed because they have to carry strong breeding characters and need the stamina and constitution to do so.

General Remarks.

Anyone hearing Mr. Scott lecture, knows the vast amount of subject matter which he presents. Some of the main points made included:—

Expensive feed is not the poultry farmer's greatest problem, although we hear so much about the price of feed. Overhead costs are the worst handicap and one of the answers is healthy birds and control of losses.

Make mashies more plain. Fancy foods are not necessary. The basic food is bran one-third, pollard two-thirds, with a protein added. Both bran and pollard must be of good quality, however.

Generally speaking, poultry farmers do not feed enough bone meal. It should be used in the proportion of 7 lbs. added to the 100 lbs. of mash. Nor is enough maize fed in Australia.

Grit should be hard and have angles in it. Smooth, round, soft grit is not sufficient for grinding the food. Flint or bluestone screenings are good.

Malt culms (comings) make excellent poultry food, but are seldom used. They have a high protein content and are very palatable. Malt comings are the roots of the malt in process of preparation for brewing. The malt is spread on a cement floor, watered and sprouts before being kiln-dried. It costs approximately 1/6 per bag at the maltsters and is a good supplement in, say, 6 to 10 per cent. of the mash.

Be a greenfeed grower. This is one of the most important provisions to make for next year. Sprouted oats make one of the best greenfeeds that he knows of.

A pugnacious cock will generally make a good breeder. He likes to see them with plenty of spirit.

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Fruit Gluts Can Be Prevented by Canning

"The Safest Foods we Eat"

THAT a larger supply of home-grown produce and an extended area of production, with better organised flow of supplies, could prevent such things as gluts of superfluous fruits of the earth, is the studied conviction of a writer in "The Fruit Grower" (Eng.), who says:

To-day, when the majority of fresh foods are to be had already prepared and cooked in cans, it is essential in the public interest that this campaign should be met with the facts that have so far been scientifically ascertained as to the effect of the canning process on nutritive values.

Medical Testimony.

It is satisfactory and of especial interest that the British medical authorities have drawn attention to the advantages to health made possible by the consumption of fresh foods in Winter time made available through the process of foodstuffs preserved in hermetically sealed vessels.

The canning industry, represented in this country by a consumption which has reached 1,600,000,000 this year, one-third being produced in Great Britain, had its origin over a century and a quarter ago, when the need for a means of preserving foods in a form convenient for safe storage and distribution led to the discovery by the Frenchman, Nicolas Appert, of the method of heat sterilisation in hermetically sealed vessels. The work of Pasteur later on prepared the way for the scientific improvements which have made canned foods "the safest foods we eat," in the words of an authority, Dr. E. V. McCullum (Professor of Biochemistry, John Hopkins University). Medical testimony to the harmlessness of canned fruit and vegetables is not lacking, and among the statements that can be given in support of the safety claim is that of Dr. W. G. Savage (Examiner in State Medicine and

Hygiene, University of London): "Compared with fresh foods and the very haphazard, inadequate and neglected control they receive, canned foods are undoubtedly safer. No one who has studied this subject can be left in doubt as to the very great value of this method of preservation to the community."

It should not be difficult to dispose of the anti-can agitators' case relative to the purity argument. One of the points insisted on in practice is that fruit and vegetables for processing are gathered at the right stage of ripeness, and that they are canned with the least possible delay. This partly accounts for the general tendency to locate the factories in places where the products are grown, thereby enabling them to be canned within an hour or so of picking, while the freshness and bloom are still unimpaired. Careful gathering is followed by equally careful sorting. So far as possible, the preparing is done by machinery. Even the peeling and coring of Apples, "topping and tailing" of Gooseberries, and removal of stones from Cherries, are mechanically performed. Thus the chances of contamination are reduced to a minimum.

Metallic contamination of the food by contact with the inner surface of the container is a question to which very close attention has been given. It has been the subject of scientific research for a number of years, among other places at the Campden Fruit and Vegetable Research Station, and a very large number of tests have been carried out to determine the extent of contamination and to what degree it might be harmful to health.

Nutritional Values.

Regarding the nutritional value of canned products, which the ignorant denouncers of "tinned foods" contend are impaired, it is important to bear in mind the contribution which this form of preserved commodities makes to variety in diet and the corresponding relief of monotony. Variety in diet is as essential to good health as fresh air and sunshine. Climatic conditions during the Winter would make this difficult to achieve were it not for canned goods which bring to the table a remarkable variety of fruits and vegetables grown in those places where conditions are such as to give produce of the best quality in the greatest abundance.

The availability of supplies of practically every variety of food-stuff throughout the year is not only of immense value in providing the essential constituents of a diet, but it has a psychological significance in that it adds materially to the relish and enjoyment of the table. Canned food is usually appetising. Appetite and desire for food are generally despised as being too closely akin to the sin of gluttony. But the fact is that appetite plays an important role in digestion, as it is one of the most effective stimuli for the secretion of saliva and gastric juice. And anything which contributes toward a free flow of the digestive juices is a powerful adjuvant in digestion.

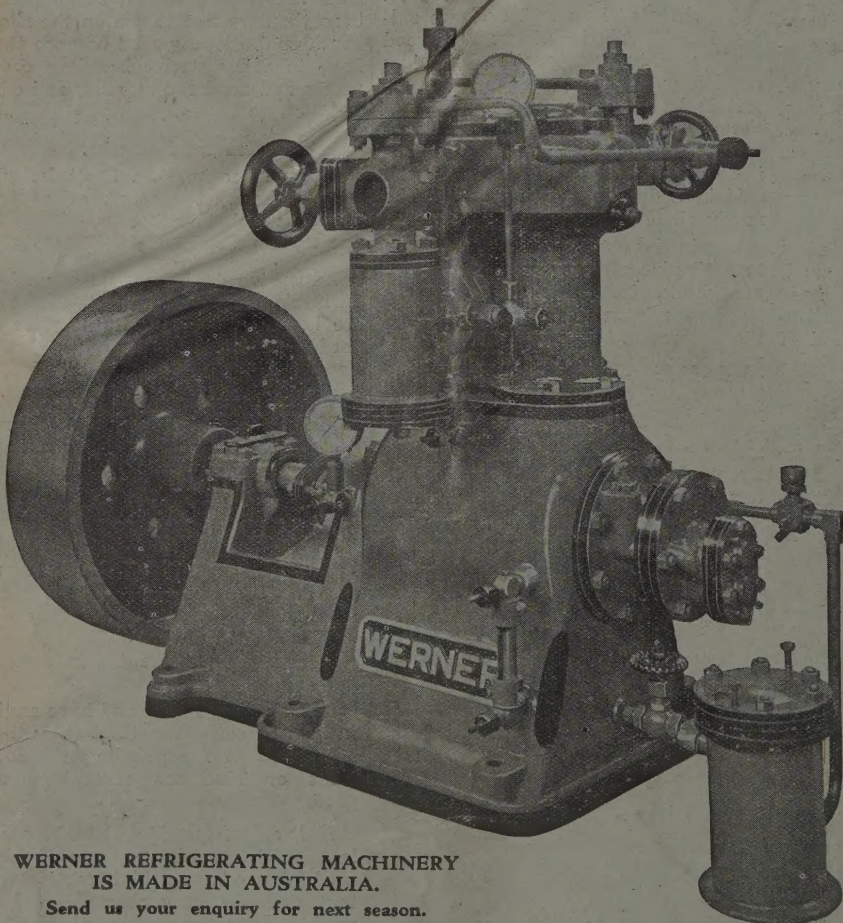
Canned foods are held to have come creditably out of the test for nutritive values, i.e., the energy value as expressed in calories, the presence of proteins of good biological value, the content of fat and carbohydrates, and the content of vitamins and mineral salts. Vitamin C (remarkable for its ascorbic or antiscorvy properties), the main sources of which are fruits and vegetables, was concentrated upon in the comprehensive investigation of English canned fruits and vegetables undertaken by Miss M. Olliver, who compared the canned material with the corresponding raw and home-cooked products as regards their ascorbic acid content. As a result of this work, which was reported upon in June, 1936, "it is concluded that during cooking and canning the distribution of ascorbic acid amounts to only a small percentage of that present in the raw material. It is a curious fact that, in some instances, notably in Carrots, there is actually an increase in the vitamin C content brought about by cooking and canning."

This finding accords with previous knowledge, based on experiments in the United States and in Europe, that the only vitamin that is appreciably injured is in the canning process in C, and that possibly there is some very slight injury to Vitamin D. All other of the vitamins remain unaffected.

The prejudices expressed by the diet-faddists have no foundation in fact. Modern canned produce having been shown by scientific tests to be a safe, hygienic, nutritious, and healthy food, meeting the demand set up by the general trend of social conditions, there is every reason for the extension of canning activities, and farmers and market gardeners will be strangely blind to their own interests if they fail to take full advantage of the opportunities thus afforded them.

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